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# Extended Essay **Guide**

Maximize Your Extended Essay Grade

This Extended Essay Guide is meant as a knowledge database on how to get a good grade on your EE. Our advice is to not plough through the whole thing, rather read the bits you are interested in.

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# Introduction

*The Extended Essay is designed to give you a first taste of academic work, thus forcing you to move beyond the standard study techniques encouraged for exams. Here, you are entirely in control of all aspects of the investigation: **formulating a research question/hypothesis, locating and examining an appropriate set of sources, structuring** and, finally, **writing and editing**.*

If all this freedom seems daunting, do not fear: the IB has corseted the task by providing you with a set of strict guidelines, which will help you to keep everything perfectly manageable. However, even a careful reading of the criteria can still leave many unanswered questions.

The purpose of this guide is to translate the abstract language of criteria into practical terms and give you some hands-on advice on how to make your Extended Essay-writing as stress free and enjoyable as possible, and help you on the way to your desired grade.

Consult this guide throughout your writing process: both as a place for initial inspiration and overview, a

helpline for specific problems and as a last checklist before your final deadline. In the end of the guide there is a helpful index so you can quickly find what page you are looking for.

You will be surprised how a few tweaks to your research question or a couple of changes to your language will affect your overall mark, so listen to the advice below carefully.

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Remember that it's never too early to start, but also never too late, to set your Extended Essay right either.

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## This guide will cover

- The initial steps of *planning* and choosing *supervisor*
- Choosing *subject, topic* and finally a viable *research question*
- *Researching*
- *Outlining* and *writing*.
- Following and using *the Assessment Criteria*
- *Getting unstuck* and *general troubleshooting*

## ***Why write an Extended Essay?***

*Before you start it is necessary to know why you are embarking on this project. As the rest of the guide will largely outline what you yourself will need to do, this introductory section shows what the Extended Essay can do for you.*

### **Academic benefits**

From an academic perspective the Extended Essay is highly beneficial; as it helps you sharpen some very key skills.

*Independent work:* Forget answer outlines and revision guides; your Extended Essay is almost entirely based on your own work and your own decisions. This is great preparation for further studies at university, where you will be expected to structure and execute assignments independently.

*Source evaluation:* Regardless of subject or type of investigation, the Extended Essay will be the most extensive opportunity for tackling any form of source material in your IB career. Again, this will help to prepare you for further studies and aid the transition from textbooks and hand-outs to reading lists and/or practical work.

*Specialization:* This is a unique opportunity for you to become an expert within your topic and thus to gain a better understanding of your subject as a whole.

### **Practical benefits**

Apart from the intellectual rewards mentioned above, writing the Extended Essay has some practical advantages as well.

*University application:* Many universities will require a writing sample from you and as your Extended Essay will probably be a fairer reflection of you and your interests than any other piece of schoolwork, it would be an excellent choice. Furthermore, having written an essay relating to your chosen university course will aid in writing a personal statement with more personal edge, or help you show some originality during any potential interviews.

*Work experience:* If you already have a potential career in mind or if you have any particular extracurricular interests which you would like to pursue further, then writing a related Extended Essay can provide you with valuable initial expertise. Some students considering a legal profession have written about the origins of the Magna Carta, some with an interest in debating have written about human rights issues discussed in the UN and budding doctors have benefited from the chemical experiments they conducted for the essay.

*Bonus points:* Writing a good Extended Essay can significantly help in improving your overall mark, which is especially useful if you feel unsure about your ToK abilities.

*Personal development:* Finally, writing an EE is not just some pragmatic opportunity-opener; it can

also be highly entertaining and personally rewarding. Do take advantage of the flexibility of the project to really tailor it to your own needs and wishes. Your research can thus include interesting travels or meetings: past students have done

everything from revisiting their family village to interviewing one of Mao's nurses. In this way, even if you're not particularly academically inclined, writing the essay can prove to be an unforgettable experience.

# Initial Steps

## *What you will need to do?*

- Structure your own work, with the aid of a supervisor.
- Spend around 40 hours on the project.
- Work with the assessment criteria (as explained further on in this guide) and make sure that the essay is consistent with the formal requirements.
- Adhere to deadlines, both to ones set by your school (idea proposal, drafts) and IBO ones (final draft).

Apart from this, you will need to learn how to manage any resulting complications of stress, time management problems or self-confidence issues. But do not feel overwhelmed at this stage, all time management issues will be discussed at length below, helping you to cover everything successfully on time. If you are stressing at any given point, we have included troubleshooting sections to help you get unstuck as well as checklists, which will allow you to constantly evaluate your own work.

## *Planning and Time Management*

*Each school has its own time frame for the Extended Essay, usually based on its experience of students' needs. Make sure that you follow its guidelines to the letter - once you get out of sync with the rest of your class it can be really difficult to get back on track.*

*And finally: remember that planning is one of the easiest tasks of your Extended Essay, but it is ultimately the one that yields the most results!!*

### Personalized Deadlines

There are ample opportunities within your Extended Essay-writing to manage and structure your own schedule. This can be challenging and you might feel a bit unsure whether you've given everything enough time and attention. Thus, it

is crucial that you establish some form of plan before you start writing. Begin by giving yourself a set of **personalized deadlines**, in order to avoid overworking certain areas and under working others. They will help you to use your time efficiently and to beat any budding procrastination, by breaking up the task into manageable chunks.



## Examples for creating deadlines

A time limit for a certain *type of source*: give yourself a number of hours to complete your secondary reading, for example. This will allow you to not spend excessive time pondering over one book or article - remember that it's important to get different points of view..

A deadline for your *overall research*: it's easy to think that an intensely profound idea or the answer to all your questions will be contained in the next book or in the next experiment. Unfortunately, this is not always the case - instead you might not be giving yourself enough time to *process* the material.

A deadline for the *data analysis*. Some will be doing this continuously throughout the project, but the majority will profit from devoting a set amount of time on it. Remember that your analysis needs to be *explicit*.

A deadline for when you should have an *outline* ready: this is important, as many students don't give themselves enough time to think this step through properly. Thus, they panic at the last minute before the draft deadline and start writing immediately. If you have a clear structure, with your main arguments and pieces of evidence already stated, actually putting pen to paper (or hands to keys) shouldn't be too much of a problem.

A time limit for writing certain *parts of the draft*: e.g. the introduction, the first paragraph or the conclusion. This will save you from getting stuck and rereading the same old paragraph, wondering if it's any good. Make sure that *each* part gets the time it deserves.

Before you can set deadlines successfully you will need to find your own **weaknesses** and **strengths**: are you a slow reader or writer? Do you work best intensely or regularly over longer periods of time? Make a list of these and then see how that will affect your schedule: for example, someone who doesn't like to spend much time actually writing should compensate for that by devoting more time to outlining and planning.

## Identifying your strengths and weaknesses

A critical aspect for you to be able to create a good time plan is for you to know your own strengths and weaknesses. Below are some tips of what to think of. Reflect carefully and honestly about your own abilities.

### *Locate problems*

Locate the main problems of your last assignments (e.g. lab

reports, essays or projects). Which part posed the greatest difficulty? Usually looking at your teachers' comments proves to be incredibly helpful: if they mostly commented on inaccuracies or the information you included, it might be useful to be make sure to spend more time reading and researching. If, on the other hand, your structure faltered, spending more time on planning should be essential.

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It is recommended that you spend about 20% of your time planning, 50% of your time researching and analysing and 20% writing and the final 10% re-drafting and editing.

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### *List strengths*

List your strengths: these could be fast reading, speedy typing or intuitive planning. Again, only determine these based on your **previous experiences** and remember never to omit a step completely (e.g. structuring, reading) due to a strength in that area.

### *Are you a procrastinator?*

Think about whether or not you tend to procrastinate and postpone tasks. If so, you must deal with these tendencies at a planning stage – providing a framework usually helps more than sheer will power. Divide tasks into manageable chunks over a longer period of time, to save you from feeling too overwhelmed and schedule in rewards for good work

(more of this in the 'Getting Stuck' section, below).

## Time Management

Bearing in mind how variable the needs of different schools and different students can be, there are still some general guidelines for how much time each segment of the project should take. Usually it is recommended that you spend about 50% of your time researching (including data analysis), 20% planning and outlining, 20% writing and the rest re-drafting and editing. Remember that 4000 words are not as much as they seem - most students risk writing too much rather than too little. Thus it is important to devote as much time to planning as to the actual writing process. Still, bear in mind that some scripts will require more work than others.

Again: do leave yourself enough **extra time to address any unforeseen problems.**

## Key Components

Make sure you always include some basic components:

- Your school's **idea proposal deadline** (usually at the end of the spring term of IB1).
- Time to **locate and look for sources** – good to start before the beginning of the summer vacation, as you can consult your supervisor etc.

- **Research** – 20 hours over the summer, but feel free to expand if necessary. Break this down into components.
- **Processing notes and outlining** – 5-10 hours.
- **Writing the first draft** – 10

hours. Usually at the beginning of the autumn term (August-September).

- **Redrafting**, usually after a meeting with you supervisor.
- **Handing in the final draft**. Plan to be done at least 3 days before the deadline.

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The Extended Essay is not as overwhelming as it seems, and by breaking it into different components, you will find it easier to avoid stress and performance anxiety.

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## Putting it all together

### *Active and passive time*

Another thing to keep in mind is the difference between **active** and **passive time**. Active time is the time you actually spend working on a task, while passive time is the time you spend “working” that you in fact spend doing other things (from writing instant messages to friends

## Summary of common planning errors

Giving yourself *too much time*. ‘I’m going to work on it over the summer’, or ‘I’ll write my draft over the next week’ are common traps; not only are they overly general, they will also give you feelings of guilt when you are not working on the essay, which might result in more procrastination and avoidance. Instead, state in your plan; ‘I will spend 10 hours reading secondary sources over the summer’ or ‘I will write my draft over four days, with 4 hours of work every day.’ Set yourself *specific goals*.

*A too tight schedule*. This point involves assuming that the separate parts of the plan will somehow flow seamlessly into each other – instead, plan your ‘buffer zones’ well. Give yourself a couple of days off between each step of the assignment, which you could use to finish things that are taking too much time. Plan for the unforeseen.

*Over-planning*. Do not include every 5-minute break, every meal or activity – you might risk abandoning your plan altogether when you start failing to perform all of your scheduled tasks. Allow some room for creativity within your project.

*Over-ambition*. Determine how important the Extended Essay is to you and bear that in mind when planning. Only give it the time you think it deserves. Don’t have grandiose plans and instead aim at getting everything done.

to visiting the bathroom). If you think writing your introduction will take four hours of active time allot more than four hours when planning writing your introduction.

It is worth remembering that writing an Extended Essay is not a full time job: don't be overly optimistic about how much time you will spend on it. Give yourself plenty of time off and remember your other commitments as well.

### *The final schedule*

Using both your own preferences and the deadlines of your school, comprise a **finalized schedule**, complete with specific time limits for each step.

The Extended Essay is not as overwhelming as it seems, and by breaking it into different components, you will find it easier to avoid stress and performance anxiety.

Add your mini-deadlines to a [Google Calendar](#) (or equivalent) to get email updates of upcoming tasks - it will help you to avoid giving up on your own plan.

Finally, planning might be somewhat frustrating, as it can reveal the amounts that you will have to do over a relatively long period of time. Do not let it discourage you – **keep your plan simple and with a clear breakdown and you shouldn't feel the pressure too much.** Designing a schedule together with a friend could also be useful, especially before the summer break.

*Where to look for further help:*

<http://www.lib.umn.edu/help/calculator/>: A useful site, which essentially structures your work for you. Good for those who find it difficult to stick to self-imposed deadlines.

## ***Working with a supervisor***

*The importance of finding a good supervisor and establishing a good relationship with him/her is not to be underestimated. While it is perfectly possible to do without the benefits that flow from a candid and productive supervisor-supervisee relationship having one will make a lot of your Extended Essay work easier.*

### **Choosing a supervisor**

Certain schools allocate supervisors according to certain internal guidelines and others allow you to choose freely. If you have the latter opportunity, use it wisely. Bear

in mind that a good working relationship is crucial in determining how comfortable you will be with your own project. If, on the other hand, you feel like your supervisor is not being helpful enough, you might need to consult alternative expertise.

Remember that working with a supervisor is essentially enjoyable – it's one of the few opportunities where you can engage in an in-depth dialogue with one of your teachers. Thus, even if you do not bond with them on a personal level, remain intellectually engaged throughout your co-operation and make sure to profit from their knowledge and expertise.

## What you can demand

Regardless of your personal dynamic with the teacher in question, you should be aware of what you can expect and to some extent demand from your supervisor.

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**Your supervisor is not responsible for your final output.**

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You supervisor should help you in formulating an appropriate research question and should be there for you to discuss any research problems. He/she should also read your first draft as well as your final one: make sure that they make written comments that they are prepared to explain and discuss during a meeting. Make sure that you can contact your supervisor whenever you need to: having their email address is absolutely essential.

Finally, don't be afraid to ask for advice in person: you are, according to official IBO guidelines, entitled to 3-5 hours of contact time and a lot of

supervisors will give you more time than that if you ask them!

## Supervisor's advice

Always be ready to listen carefully to your supervisor's suggestions and ideas: some students feel strongly about their scripts and will not accept any criticisms. It is, however, better to discuss your worries openly rather than dismissing any advice with half-hearted nods. Remember that your supervisor has previous experience of reading this type of essay.

Furthermore, your supervisor is not responsible for your final output: you are. This also means that you don't have to follow their advice, especially if it interferes with your own fundamental plans and ideas.

*When to always follow your supervisor's advice*

When something relates directly to the **assessment criteria**. Never ignore suggestions based on strict IB guidelines (e.g. establishing an acceptable research question).

In all **technical matters**: formal criteria (referencing, bibliography, layout), whether or not you are using the correct terminology etc.

In most issues relating to **method**: your supervisor will usually be more experienced in establishing feasibility – they will know if it would be possible to get certain materials for experiments, whether or not there is enough written material etc.

*When your supervisor's advice is optional*

In **matters of style**. Sometimes teachers might have particular tastes when it comes to language and the use thereof. Do not compromise needlessly with your own perceptions of effective style – as you will hear many times throughout this guide, originality is important.

In choosing the **focus** of your topic. Some supervisors, especially those with crystallized interests, will inevitably try and influence your idea process. Do not feel that you need to follow any of their advice: use the teacher more as a brainstorming partner than an academic guru. Your own interest and input are essential.

### Checklist: Has your supervisor fulfilled all necessary commitments?

- Have they spent 3-5 hours advising you?
- Have they been available at all stages of the process?
- Have they read your drafts?
- Have they commented on the drafts constructively and in detail?
- Have they been able to give you specific advice on how to write certain parts of the essay (abstract, bibliography)?

If they have not met all of the expectations listed above try talking to them personally or exchanging them for someone else, to bringing it up with your IB coordinator. If you are at the beginning of your Extended Essay process – make sure that your supervisor knows what your specific needs are. Make it clear if you need a certain amount of contact time.

# The start of the essay

## *Picking a subject and a topic*

*Choosing a subject that you want to work with and a topic within that subject that interests you is of obvious importance. Below you will find some advice and some examples of idea processes that might be of some inspiration for you.*

### Choosing a subject

An Extended Essay needs to be written in an IB subject. It does not necessarily have to be in a subject that you have studied yourself (although it is highly recommended) and it does not have to be in a subject that you are studying at Higher Level. What is important is your own interest and knowledge: you have to feel comfortable employing **relevant terminology** and **investigative methods**. This means that you have to be comfortable with the language that the normal practitioners in your subject are prone to using and to be able to appreciate or emulate methods used by these. Language is treated more in depth in the section devoted to the relevant criterion, to learn more about methods have a look at the chapter about research process.

Bear in mind that the IB is very strict about topics fitting wholly within a specific subject area. Therefore, make sure that you know how the IBO defines your chosen subject and what it considers to be feasible topics. For official IBO

guidelines look at the following link. Primarily consult the material compiled for your subject: <http://production-app2.ibo.org/publication/19/part/4/chapter/1>

It may be best to **avoid very interdisciplinary topics** to avoid the temptation to stray from your subject area. Also, make sure that you understand whether or not a certain method is demanded from you: e.g. for Group 4 subjects it is strongly preferred that you conduct your own experiments.

### Choosing a topic

There are several ways in which to get ideas for a potential Extended Essay: some students will begin the process with a clear and crystallized notion whereas others will require more time and research before settling on something specific. Do give this part the time and attention it requires - a well-chosen idea will help you in all subsequent steps.

*Steps to bear in mind as you look for ideas*



Choose according to **interest**, not according to what's considered 'important' within the subject. For a literary subject you don't have to write about a classic novel or celebrated poet, in history don't feel like you need to address wars and dictatorships. You will be working on your extended essay for a long time, so make sure that you're not likely to get bored. This ties in with the next point as well.

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Do not feel that you need to choose a topic that will change the face of science or uncover a new Watergate.

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Don't choose a topic just because you think you can answer it already - that's never a good sign! **Originality is awarded** – simply because something has been covered thoroughly in class does not make it a good choice. Of course, you will need to know the basics before researching further, but be prepared that you will also need to go beyond any core syllabus in order to write your essay.

Make sure that your idea can be treated successfully with the amount of time that you have at your disposal: **don't make your topic too broad**, as this will usually result in ceaselessly referencing and narrative essays or endless numbers of experiments.

**Don't make your topic too narrow** or specialized either. Remember that you will still need to

be able to find easily accessible sources and receive some relatively competent advice from your supervisor.

Even though originality is important, you're not expected to come up with seriously groundbreaking conclusions. Do not feel that you need to choose a topic that will change the face of science or uncover a new Watergate.

### If you get stuck

Keep a list of any questions you might have asked yourself during the course of your IB education ('how does that work?', 'how can that be improved?' etc). It doesn't matter if they're simple - you can always tune and refine them into proper research questions. Often the most exciting projects arise from simple curiosity - it really helps if you actually want to know the answer to your own research question.

Also, look to your strengths and experiences: language skills, travels or any form of special training may help you find an unusual angle on an old problem. Talk about your ideas and problems with your friends and family, or, indeed, anyone you come across who might be inclined to listen. Inspiration and help can come from the most unlikely of sources.

Don't worry if you don't get a great idea straight away. It's better to take your time than to rush into something you're not sure about.

You will, however, be surprised at how many ideas actually will come to you once you start looking for them!



## Examples of idea processes

### *Student A - History.*

Wanted to write about the effects of World War II on the Cold War, but didn't feel comfortable discussing it from the perspective of the US or USSR. The student spoke fluent Swedish and thus decided to focus on the effects of the war on Swedish national self-perception. After having sent an email to a university lecturer the student was recommended a couple of history text books from the 1950s and 1960s, which were readily available to the student. This then formed into a project about how the views of World War II, as reflected in the textbooks changed during the 1960s and to what extent these changes were caused by Sweden's past neutrality or by the contemporary changing international situation.

*Comments: A good example of how new material can help to refine general ideas into a precise research interest. Note how the initial idea is not necessarily fully reflected in the final proposal - it's important to be able to be flexible within your given area of interest.*

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### *Student B - English A2*

Wanted to write something about gender issues, but wasn't sure of which works to focus on. After having consulted an English literature text book, the student found that a work he had already read - the Great Gatsby - was full of appropriate material, which he had previously not thought of. Having also read much other literature from the 1920s, he then chose to compare Gatsby to Hemingway's The Sun also Rises, to see how they differed in their portrayal of female influence.

*Comments: This is an example of a relatively straightforward idea process, yet it shows how consulting even the simplest of sources can help to trigger a stream of thought. Sometimes inspiration will come*

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### *Student C - Biology*

Wanted to write something about enzymes, but wasn't sure of what type of experiment to conduct. After consulting scientific journals and doing some general research about enzymes, they decided to focus on factors that affect rates of reaction. The student then contacted his mentor and discussed the availability of materials, what enzymes he would have access to, and what types of reactions he would be able to perform. After narrowing it down to three options, he went back to the scientific journals to determine which factors - pH, temperature, and enzyme concentration - had been well documented for the different possible enzymes and reactions. Using this process of elimination, the student was left with testing the effects of different enzyme concentration on the rate of one of his chosen reactions.

*Comments: This is a good example of the initial steps in developing an idea from a Group 4 essay. Rather than starting out looking for an experiment, which can seem like a very daunting task, seek out a topic of interest, determine the availability of experimental materials, and then return to the scientific journals to determine what would be appropriate for the scope of the essay.*

## Summary – Subject and Topic

- Make sure you know the subject and its specific language and methods
- Avoid interdisciplinary topics
- Choose a topic you are interested in
- Remember that originality is awarded
- Don't make your topic too broad or too narrow
- Don't expect to revolutionize your field

## *Working with your Research Question*

*Having defined a more precise general topic to work with, it is time to transform it into a proper research question. Your research question is the mind and drive of your essay. It guides your research, analysis and writing.*

### Finding your question

This is not as straightforward as it seems and might require a couple of attempts before getting everything right.

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Essentially, the key to your question should be specificity.

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It's crucial that you **establish a well-defined and narrowed-down question before** you start researching and writing properly, as this will help you keep your investigation within the word limit, remain analytical and argumentative throughout and also, help to successfully write an introduction

and conclusion that follow the criteria. Of course, you can edit and rephrase the question during the whole process, but it will definitely help you to have something precise to work with from the outset.

Essentially, the key to your question should be **specificity**. This is something that is difficult to teach in any roundabout way; the key is to look at previous questions in your subject and get a feel for what they sound like. Many students are only familiar with exam questions or pre-planned experiments and thus intuitively phrase their own questions/hypotheses to mimic them.

Another, often overlooked fact about your research question is that it does not formally need to be stated as a question at all! A tightly focused hypothesis will work equally well

and might, indeed, be preferable in the case of a group 4 essay.

## Dangers & Troubleshooting

It is of great importance that you learn to realize whether your question is possible to use for an Extended Essay or not.

Below are a couple of prime dangers to avoid when formulating your question.

### *Generality*

Avoid questions which cover too much at once - if your area of interest is quite broad (e.g. reasons for World War II) then treat your Extended Essay more like a chapter within that topic than an exhaustive explanation of it.

EXAMPLE 1: *Should Appeasement be blamed for the Second World War?*

=> *What was Chamberlain's personal involvement in formulating the policy of Appeasement?*

Comments: The first version reads more like an exam question than one suitable for research. Both 'Appeasement' and 'World War II' are extremely broad topics, with tons of material written about them. Furthermore, the 'blame' discussed in the question can easily result in bantering, polemic answers. Thus, by zooming in on one specific factor of Appeasement you can still discuss some of the elements of the initial question, but your focus will be more manageable.

EXAMPLE 2: *Extraction of natural products from plants.*

=> *How can the natural oxidant rutin be extracted and purified from the seed of the Chinese Scholar tree?*

Comments: The first version is rather a statement of interest than a research question: the final version is illustrating the principle of the general interest, but through the use of *one, specific example*.

### *"Un-answerability"*

Don't attempt anything that there is no information about, or something where you will have to retort to speculation. Remember: the Extended Essay needs to be constantly backed by *evidence*, not theorizing.

EXAMPLE 1: *Did King John of England suffer from bipolar disorder?*

=> *How was the idea of King John's "super-human wickedness" created and how far is it supported by non-narrative sources?*

Comments: The first version would have required large amounts of speculation, as the sources available are incredibly inconclusive. There is also the anachronistic danger of applying a modern diagnosis onto history: we will never know whether bipolar behaviour was a socio-cultural product or due to a physical disorder. Thus, by focusing on the nature of the sources and their depictions of the king, you are turning your question more answerable.

EXAMPLE 2: *What is the nature of the Black Hole at the centre of the Milky Way?*

=> *Is it possible to determine the presence of a black hole at the centre of the Milky Way?*

Comments: The first version assumes that there actually exists a black hole – do not use speculative knowledge as the basis of your essay. The second question investigates the existence of the black hole, thus looking at the speculation from an analytical perspective.

### *Obviousness*

Don't let the answer to your question seem self-evident or banal -

EXAMPLE 1: *Has the outbreak of AIDS affected sub-Saharan economies?*

=> *What are the long-term effects of the outbreak of AIDS on the economic development of South Africa?*

Comments: This is a question that is easy to fix, simply by adding 'how'. However, by focusing on long-term effects there is more room for discussion and prediction rather than recounting already known facts.

EXAMPLE 2: *What are the effects of carbon dioxide pollution on global warming?*

=> *What is the comparative significance of different sources of carbon dioxide pollution in New York and Sacramento?*

Comments: The first version sounds like a textbook chapter. The second one manages to sound more analytical and innovative, by including a comparison of **different** sources.

### **Narrowing the question**

There are several ways in which to make your question more precise, without changing too much of the general investigation idea. The most common one is narrowing by content, i.e. limiting the amount of material you will be looking at.

For an experiment-based essay, the more you determine what specific materials you will be able to work with and what types of experiments you will be able to conduct, your research question will begin to take a more specific shape.

your question will need to be leading somewhere interesting.

### *A specific time period*

NOT: Why did the U.S.S.R fail to accept the Marshall Plan?

BUT: Did the events of 1947 determine the USSR's rejection of the Marshall Plan?

### *A geographic area*

NOT: What were the social effects of the shifted borders after World War I?

BUT: How was the Hungarian minority in Ruthenia treated by Czechoslovak authorities after the Treaty of Trianon?

### *A work or author*

This is not just useful for literary subjects, but also for politics, philosophy, history etc., as it allows you to relate directly and critically to the traditions and methodologies of your subject.

### *Comparisons*

This might seem slightly counter-intuitive as a narrowing-down technique, but by comparing you are immediately turning your question (and your answer!) more analytical.

NOT: How does Ibsen portray the dynamic of the bourgeois household in Hedda Gabler?

BUT: How do Ibsen's Hedda Gabler and Flaubert's Madame Bovary respectively portray the dynamic of a bourgeois household?

### *One type of source*

NOT: How were popular perceptions of the Great Depression in America shaped by the media?

BUT: How did the photographs of Dorothea Lange shape popular perceptions of the Great Depression in America?

### *A particular organism*

NOT: How can natural products be extracted from plants? e

BUT: How can the natural oxidant rutin be extracted and purified from the seed of the Chinese Scholartree?

### *A particular phenomenon*

NOT: What is the efficiency of electromagnetic damping?

But: Is the efficiency of electromagnetic damping of a moving glider a function of the initial kinetic energy of the glider?

## Finalizing the question:

Often, however, you will need to work with several of these narrowing techniques simultaneously to optimize the potential of your question:

### EXAMPLE 1:

BEFORE: “What has been the effect of the minimum wage on unemployment in Austria?”

AFTER: “What has been the effect of the recent imposition of the minimum wage on unemployment in the fast food industry in Graz?”

### EXAMPLE 2:

BEFORE: “The effect of acidity on plant growth”

AFTER: “A study of the effect of differing pH levels on the growth of *Phaselous vulgaris*”

## Approach

For a scientific essay, your research question must also be coupled with an explanation of the **experimental approach** that will be taken to answer it. This can be highly useful for subjects within other groups as well, as it helps you to critically address the needs of your own work process before embarking upon it. The approach should not be a detailed procedure, but an outline of the type of experimentation you will undertake.

### EXAMPLE FROM BIOLOGY:

TOPIC: The distribution and growth of lichens on urban pavements.

RESEARCH QUESTION: How are the distribution and growth of lichens affected by sulphur dioxide and ozone levels in the atmosphere?

APPROACH: Thalus diameter and population density data is collected from selected sites in different parts of the city. This data is then correlated with published data on the levels of SO<sub>2</sub> and O<sub>3</sub>.

### EXAMPLE FROM MATHEMATICS:

TOPIC: Archimedes’ calculations of areas.

RESEARCH QUESTION: What is the legacy of Archimedes’ calculations of circular and parabolic areas in today’s methods of integration?

APPROACH: Describe how Archimedes determined the area of a circle, by using inscribed polygons, leading also to his measurement of  $\pi$ . Continue with a description of his method of discovery for calculating the area of the parabola.”<sup>1</sup>

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<sup>1</sup> Example taken from: <http://production-app2.ibo.org/publication/19/part/4/chapter/1>

It is possible to state an approach for an essay in the humanities as well, as the following example illustrates:

EXAMPLE FROM FRENCH B:

TOPIC: The use of 'verlan' in spoken French.

RESEARCH QUESTION: To what extent has 'verlan' been rejected by Parisian *lycée* students in favour of other forms of slang?

APPROACH: Three *lycée* classes chosen from different parts of Paris, but from

the same age group will be a) observed during recreation periods and b) interviewed about their language use and about their relationship to 'verlan'.

Finally, it is important that you keep track of the sources you used to arrive at your research question.

When you write your essay, you will want to briefly explain how you developed your research question, how you narrowed it, as well as its limitations and what it does not intend to address.

## Summary – Working with your research question

Most essential is that your question is specific enough to be treatable within the frames of your essay:

- Avoid generality
- Avoid un-answerability
- Avoid questions with obvious answers

To narrow your question focus on:

- A specific time period
- A geographic area
- A work or author
- Comparisons
- One type of source
- A particular organism
- A particular phenomenon

# Research Process

*This should be the weightiest part of your Extended Essay process: devote much time and effort to it. Well-focused and well-structured research will aid your writing incredibly and will prevent you from panicking at the last minute. If you've already narrowed down and defined your research question, determining a proper study plan should not be too much of a challenge. It does, however, require a set of skills that are not necessarily immediately obvious. The following section is divided into two sections: one general and one group-specific. Make sure that you go through both – do not jump straight to the points relevant to your subject.*

## General Advice

### Getting started, step by step

#### 1) Background reading

Do some initial background reading - at this stage supervisors will be incredibly useful, as they can point you towards a **qualitative overview**. Look at textbooks or syntheses and even some Internet research to cover any overt gaps in your general knowledge. Use this mostly as a **point of inspiration**. Do not rely solely on one overview throughout your Extended Essay research - this might end up making your answer one-dimensional or put you at a greater risk of being accused of plagiarizing.

#### 2) Develop a hypothesis

Once you have narrowed down your topic and research question, you will need to **develop at least one hypothesis**. In order to do this, you must do sufficient research to make sure that you understand the theory behind the research

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Make sure that your sources relate directly to your research question and that you're using several different types of sources.

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question that you wish to pursue, that you have a well-supported argument for how you arrived at your hypothesis, and that you could address any theoretical assumptions you have made. This is an especially crucial step for Group 4 & 5 Extended Essays, but should be looked at for other subjects as well.

#### 3) Determine sources

Determine which kind of sources you would like to examine. Make sure that these relate directly to your research question and that you're using several different types of sources alongside each other. Even if you specifically wish to examine one type of primary material (e.g.

interviews, data collections) you will need to consult secondary sources as well, to make sure that you understand and process different points of view.

Remember to think this step through, and not limit yourself needlessly by only choosing an obvious and uninspiring set of sources - you could use film, news coverage, research papers or diaries, all depending on your own approach.

Usually, it's advised to find at least one primary source that you can subject to your own, individual analysis.

#### *4) Locate your sources.*

This could mean finding somewhere to conduct an experiment (e.g. your school laboratory) or ordering books.

Again, **planning is essential**, so that you don't stock up on piles of material which you won't be able to process, or that you only get hold of

literature covering one aspect of the investigation.

For source-based essays, aim to have about 10 items on your own reading list. This will allow you to have several different varieties of sources, but also to keep within the word limit.

Some useful places to hunt for sources might be:

**YOUR SCHOOL** Many teachers have some great literature, which they usually don't mind sharing with students. Remember to take great care of any borrowed items.

**PROFESSORS FROM UNIVERSITIES OR OTHER EXPERTS IN YOUR FIELD** This can be an incredible way to get information, ideas, and scientific resources. Try writing to a handful of experts in your field, as some are better at responding than others; in general academics are incredibly busy, but will most likely be very flattered that you are contacting

## More about online sources

WorldCat is an online database that catalogues the contents of libraries around the world. If you find something that you would like to use, it is often not difficult to have it sent to a local library through inter-librarian loan.

<http://www.worldcat.org/>

Google has two particularly useful tools that will narrow your search results to more appropriate sources for your essay. Google Books limits searches only to published books while Google Scholar allows you to search through academic articles. Though some of them do have a restricted view, many of them can be read entirely online. Even if they do not, they can give you a good sense of what journals may have articles that you are interested in and scientists whose work you may want to look into further.

<http://scholar.google.com/>

<http://books.google.com>



them. This is more likely to be true in disciplines where public interest is not usually to be found.

**YOUR LOCAL LIBRARY** Never underestimate it! Some libraries are able to order books for you; arrange inter-library loans and others might help you locate other places to look. Remember to check the library's cataloguing system.

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Sometimes the best ideas come from unforeseen or mundane sources!

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**ONLINE** Here you can find official documents, newspaper archives, documentaries, research projects, e-journals and, of course, Wikipedia. Be careful with online sources however, and only cite a text that have been officially published and will not be subject to change by the time your essay reaches an examiner (thus referencing Wikipedia is still a major Extended Essay faux-pas). See the text box on the previous page for more advice.

**GEOGRAPHICALLY FIXED SOURCES** Find out if you want to see a site of special interest, a museum exhibition or an artwork. Seeing some 1960s industrial design displayed in the Victoria & Albert Museum when writing about the Kitchen War can be both informative and inspirational, as can visiting a university laboratory or research centre. Try hard to make your Extended Essay experience as three-dimensional as possible.

### 5) Start

Finally, *start researching*. Make sure you are familiar with basic research know-how:

- Expanding available information
- Reading skills
- Note-taking

### Expanding

Regard your research as an **information web** – sometimes you need to branch out into new territories and be adventurous, building on what you have already learnt. But even after having painstakingly located sources moving from your initial reading list might be a challenge. Do not fear – most of the time everything you need to move on can be found in the information you already have.

Look at the **bibliographies and footnotes** of the works you are studying to see if you can identify more material to work with. Also, remember to see if the works you are reading are presenting any 'classic' debates or trendsetting authors: make sure that you consult these as well.

Write down a set of **keywords** for your topic and use them for further online searches.

Prepare for the unexpected: bear your extended essay in mind when you read daily newspapers, watch films, read novels etc. Sometimes the best ideas come from unforeseen or mundane sources!

## Reading Skills

Reading should invariably be adapted to the demands posed by each particular source. Below are the most common ways of approaching texts:

**SKIMMING** is useful for longer texts that do not form the core of your research interest. Often, it's better to get an overview of the book's argument instead of noticing every detail.

**READING VERY CAREFULLY** This involved rereading, marking the text with notes and/or post-its, noting down each piece of major evidence. This is crucial for any classic texts, anything directly addressing your own question, or for shorter texts, such as journal articles.

**USING THE INDEX** Is often overlooked as a reading technique; if you are not sure whether or not a book or article is useful to you, look at the back indeed: search for terms which are important for your question and see where they are included in the text.

## Note-taking

Make clear notes on each source that you read, even if you don't think that you will use it at that particular time. Always write down the information you will need for a bibliographical entry and always mark when you are quoting in any way. This will help you avoid plagiarism.

Summarize the **argument** of every secondary work you consult,

instead of quoting extensively. If you've written down the author's words exactly you will not have processed his ideas yourself. Avoid this by constantly thinking: what does the author actually mean? How can I put it the simplest way? Don't make your summary longer than a few sentences.

Analyse and evaluate each source. Keep a separate sheet of paper and write down any **weaknesses or strengths of a method** or approach as you think of it. This will be extremely helpful when you need to formulate your own argument.

The same that is true for arguments is also true for **experimental setups or data analysis** if you are reading experimental reports or mathematical papers.

Keep a working outline. Some students recommend that before you begin any research, you create a file that has a section for each of the suggested headings. As you conduct your background and experimental research, keep track of all the data you used as well as the sources you used in each section.

As you start working with a lot of similar-looking journal articles, it can be difficult to remember what you used each one for, and keeping track of them in this fashion can be very useful.

## Summary – General Advice

- Start off with a good qualitative review of your research area
- Develop a hypothesis to get good direction in your research
- Determine what sources to look for and where
- Use each source extensively to expand your research
- Throughout take careful notes and use appropriate reading techniques

## *Subject Group Specific Research Advice*

### Group 1 – A1 & A2 languages

In these subjects you will usually conduct a detailed analysis of one or several literary texts. These can be: poems, novels, novellas, short stories, and anthologies... The limitations to your choice are mostly strictly linguistic: it is crucial to bear in mind that for an **A1 topic at least one of your texts should be written** in the studied language, whereas for **A2 preferably all works** covered by the research question need to fulfil this criteria.

Once you have chosen which works to focus on, you have to devise a strategy to make your study of them the most efficient. Many students choose a literary topic because they think it will involve less reading, many of them found the World Literature assignment 'easy' and think that the Extended Essay will be equally fuss-free. Needless to say, this is a self-defeating approach; writing in an A1 or A2 requires the

same amount of research as any other subject. It is, however, more dependent on your own mind than on any formulaic approach.

Thus, the following steps are necessarily basic - make sure to use the advice creatively, always bearing in mind your own vision for the project.

*Get hold of your texts.*

An extremely simple point, but you would be surprised how many students procrastinate with doing this simply because they have 'read them already' or couldn't find them in the library. The sooner you get hold of them the better – remember that they are the essential core to all your subsequent research. Finally, it might be a good idea to **own the texts** yourself: somehow, this makes many feel more in control of their reading process, as they feel free to make small notes in the margin and don't have to worry about library fines. But this is of course entirely optional.

### *Determine approach.*

This was briefly mentioned in the previous section, but it is of high importance to a literary subject - it is easy to read aimlessly, noticing the beauty of the language or the occasional plot twist. What you really need to do instead is to establish a form of filter: how will you look at the texts? Remember that your research is designed to answer a question.

**STYLISTIC DEVICES:** Looking at narrative techniques, use of imagery and symbolism, use of colloquial language.

**CHARACTER DEVELOPMENT:** Looking at character development and relationships between characters.

**MOVEMENTS:** Looking for elements of certain movements or schools within the texts, e.g. beat styles, Romantic imagery.

**THEMES:** Looking at literary themes or plot elements. These could range from obvious, general ones, such as love, death or crime to more niche and specialized ones.

**THEORY OR CONCEPT:** Applying a theory or concept to your texts. This could be philosophical, political or something generally part of the public debate: looking at Marxist class conditioning, Freudian theories or feminist ideas could help you in developing a more critically engaging answer. Do not, however, embark upon a project using a theory you know little or nothing about – a simplistic level of knowledge will hinder your analysis greatly. Thus adopt this approach only sparingly

when you are confident that you can perform the requisite analysis well.

### *Read the texts.*

The first thing to do is to read them at the beginning of the summer: **go through them as you would any other literary work.** Enjoy the process and do not speed-read or forcibly make notes. Keep a notebook with you as you read, but only take down things of exceptional interest – you will have time for the obvious points later. This will hopefully allow you to familiarize yourself with the content.

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In the beginning, enjoy the process and do not speed-read or forcibly make notes.

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### *Re-read the texts*

Re-read and take careful notes, armed with a clever selection of materials: post-its, page markers, note books, colour-coordinated pens. As you have to mostly note down your own ideas and analysis, make sure that you keep yourself from getting bored by making the process interactive.

Make sure to **know your texts as the back of your hand:** re-read and re-read again, if necessary. However, keeping careful notes and annotations will save you a lot of time and frustration.

### *Read secondary material*

It is surprisingly easy to rely on your own ideas sometimes. The IB guidelines, however, specify that you should always **consult secondary material, even in a literature essay**. Do not forget this! Also, do not consider this step as boring or somehow less stimulating: you have a wide range of different texts at your disposal. You can choose to look at biographies, author diaries or literary criticism, and even film or theatre adaptations (a great way to see certain themes or symbols more illustratively), so make sure to choose well to suit your needs.

### Group 2 – B & *ab initio* languages

This is an Extended Essay written in (and relating to) the subject language and is probably the group with the greatest amount of personal freedom, both in choice of possible topics as well as sources. Below are the three main categories for Group 2 essays, each with a separate research technique.

#### *Language & linguistics*

This does not need to be technical – it could deal with slang, language bans or regional dialects. Usually, however, the focus should be on **language use** rather than linguistic history. Therefore, try, as far as you can to gather some **primary evidence**. This could be in the form of questionnaires, language tests or oral interviews. Remember that it could be useful to have a comparative result (from e.g. another region) to aid your analysis,

even if you are only specifically looking at one case.

#### *Social & cultural aspects*

This can include everything from **film to certain socio-cultural practices**. Again, do not make your research too one-dimensional: simply reading about a certain cultural practice will not give you enough information for an Extended Essay. Try and incorporate primary evidence: song lyrics, newspaper material, adverts, television programs etc. Many of these are readily available on the Internet and will thus be a useful for those who do not have access to an area where the language is spoken. Also, have a look at the Group 3 advice (below).

#### *Literature*

This is highly similar to the research process for Group 1 (see above). Here the main difference is that all works investigated must have been originally written in the target language.

Secondly, it is advisable to look at **aspects and themes that are important/typical of the given culture** and which are not simply of literary interest (e.g. *The 'dresiarz' as a social problem in Dorota Maslowska's Wojna Polsko-Ruska pod Flaga Bialo-Czerwona* might be too [...]).).

### Group 3 – Individuals & societies

This is probably the group of subjects offering the greatest variety and variability. The main element these subjects have in common is the

study of human societies, past and present.

Of course the methodology for each is vastly different, ranging from the model-based approach of the economist, via the experimental and empirical methods of the psychologist to the more ambiguous, ever-changing methods of the historian. Because of this variability some advice that is true for one group 3 subject will not be true of another. Apply your critical skills when reading on.

Use your own **local, cultural and social experiences** – make sure to bear that in mind when planning your research.

Especially in society-based subjects like these the IBO really wants to encourage their students to show some international nuance. Thus, writing about your own region or including research that has been conducted in your language/country could be a good idea. Also, in most subjects you could conduct some oral research: do try and talk to relatives to find potential interviewing candidates.

Always use both **primary and secondary research**. This is absolutely essential for most of these subjects. You do not, however, need to present any form of full-blown scientific investigation (unless, of course, you are conducting an actual

## Some digital archives

### **Internet History Sourcebook Project, by Paul Halsall**

<http://www.fordham.edu/halsall/> This is an extremely useful site for documents: here everything from medieval taxes to Stalin's speeches has been covered. It is also remarkably easy to navigate, in spite of its old-fashioned design.

### **Perseus Digital Library**

<http://www.perseus.tufts.edu/hopper/#> A document-based site: this one has anything from papyrus rolls to political pamphlets in 19<sup>th</sup> century America.

### **Internet Library In Sub-Saharan Africa, ILISS**

<http://www.ilissafrika.de/en/> Provides literature and ideas for further research in African Studies. Useful for students of politics, human rights, economics or history who have an interest in this continent.

### **MapLibrary.org**

<http://www.maplibrary.org/index.php> Provides easy-to-use access to different forms of maps, recognizing both geophysical feature as well as administrative boundaries.

### **Social Science Open Access Repository, SSOAR**

<http://www.ssoar.info/en/home.html> This contains 3697 documents and articles relating to the social sciences and their various sub-disciplines.

### **Archive.org**

<http://www.archive.org/index.php> Internet archive is a vast collection of images, videos and texts.

experiment) – rather a text-based, argumentative answer is encouraged.

### *Types of primary research:*

**QUALITATIVE RESEARCH** Qualitative research is characterised by collecting data that is not directly amenable to numerical manipulation. Examples could include: interviews or other oral testimonials, images, manuscripts, objects, film, video. Potential disadvantages could be the essentially subjective nature of the researcher and the time it takes to process this kind of data.

**QUANTITATIVE RESEARCH** This kind of research is contrasted with qualitative research in that it collects data that is amenable to numerical manipulation. Questionnaires, censuses or polls can all form part of this form of process and of course traditional measurement as found in the natural sciences. You can (and should) subsequently process the data into the form of statistics. Weaknesses include the fact that the researcher inevitably composes the research with certain pre-conceived ideas in mind: for example, a multiple-choice questionnaire already has lots of guiding information contained within it, even before any answers have actually been made.

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**Your examiner wants to see evidence of personal involvement.**

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By acknowledging the different forms of research you will be able to make your essay more analytical and evaluative. Always try and include both types of research in any investigation.

### *Finding material for primary research*

**FAMILY** They could prove to be good interviewees or questionnaire-fillers.

**YOUR LOCAL RESOURCES** Think about if there are any specific groups of people that you could hand out questionnaires to (e.g. for psychology), any companies whose work you could look at or any sites of historical interest. This is not in any way trivial or basic: one high-scoring Economics Extended Essay simply gathered information from a nearby market place. Your examiner wants to see evidence of personal involvement.

**DIGITAL LIBRARIES** Digital archives often stock articles as well as documents – make good use of any you might find.

### *Finding material for secondary research*

The secondary sources for Group 3 should be pretty straightforward to find – refer to the general advice section if in doubt.

## **Group 4 – Natural sciences**

All the subjects forming the natural sciences share a similar research methodology: the collection and processing of objectively measurable data.

This sets them apart from most other text-based subjects. If you are planning to write your Extended Essay in a scientific subject, **make sure to follow the advice included below: in this case, reading through the general comments will not be enough.**

#### *Establish where to collect your data*

Although it is not required that a student **conduct an experiment** it is **highly recommended**, and will actually make writing and structuring the essay much easier. These experiments may take the

form of laboratory experimentation, surveys, microscopic observations, fieldwork, etc.

If you decide not to conduct an experiment, you may write a **literature-based essay**. This requires you to find – generally through scientific journals or a similar source – experimental data that has already been collected. It is important that if you go down this route that you do not copy the data analysis conducted in the original experiment. Rather, you should obtain the raw data, re-manipulate it, and conduct an independent analysis of the results.

### Questions to ask yourself: improving your experimental procedure

*Is there any way to simplify the procedure?* Remember, simpler is better.

*Is there a way to eliminate or better control existing variables?* The fewer uncontrolled variables you have to deal with, the more reliable your data will be and the easier it will be to analyse.

*Do I have access to all the materials necessary to complete the experiment effectively?* If not, you will want to either find substitute materials or develop a new procedure.

*Do I have a clear method for precise and accurate data collection, and do I have somewhere to record this data?* Having a procedure for collecting data is just as important as having a procedure for conducting the experiment itself. Before you begin your experiment, create a sheet that will allow you to keep an organized record of all of the data and observations you will need to collect.

*Do I know with certainty what the outcome will be?* If so, you probably need to develop a new procedure. While it is good to be confident in your predication, if your background research has left no room for doubt or discovery, you should revise your experiment.

*Most importantly, is the design of the experiment mine alone?* It is important that you are honest with yourself here. If your procedure is largely a copy of an experiment that has already been done, you are not fulfilling your requirement for independent research. If you have doubts about your procedure, consult your supervisor before going any further.



In general, literature-based essays are much more difficult to write as it can be difficult to reanalyse data that has already been published and it is something that you should avoid.

Conducting a new experiment not only prevents IB from questioning your originality in this way, but gives you greater control over your research, making analysing the data and sources of error much easier to discuss.

### *Develop an experimental procedure*

When designing your experiment, include a detailed explanation of each step you intend to conduct, specific descriptions of the materials you intend to use, and a plan for monitoring and controlling all of your variables (this will be discussed further in the next section). This procedure may be formatted any way that will make it easy for you to follow, and can be structured similarly to those you are used to using for labs in class. Remember, someone following your procedure should be able to easily and accurately reproduce your experiment.

Because your experiment is the core of your essay, it is recommended that you work through the procedure multiple times.

### *Conducting your experiment*

When you are conducting your experiment, **follow your procedure exactly as written**. Although it is not recommended, if you decide that it is necessary to

deviate from your plan, be sure you make these changes to your procedure, as the procedure that you publish in your extended essay should be that which you actually conducted, even if it was not what you initially intended. For most experiments, you will want to **complete multiple trials**, and it is important that your procedure is consistent between these. If you spend enough time creating a detailed procedure, actually conducting the experiment should be relatively straightforward.

### *Controlling your variables*

When you are writing your procedure, you should also develop a comprehensive list of variables that you will need to take into account. You will need to classify these as **dependent, controlled, or uncontrolled**.

**DEPENDENT** This is the variable that you will measure in your experiment. If you classify a variable as dependent, you will need to explain how it will be measured.

**CONTROLLED (INDEPENDENT, FIXED)** A controlled variable is one that the experimenter has control over. An independent variable is one that is manipulated, while a fixed variable is one that is held constant. If you classify a variable as controlled, you will need to specify whether it is independent or fixed, and explain the steps you will take to control these variables. These steps often become incorporated into the procedure as well.

**UNCONTROLLED** Sometimes you won't find this category among classifications of variables. For most

simple experiments all the relevant variables can be classified as either dependent or independent. In more complex experimental designs this won't always be possible. If you need to classify a variable as uncontrolled, you will need to explain why the variable cannot be controlled, how it could potentially influence your experiment, and what steps (if any) will be taken to minimize these effects.

### *Ethics and procedure*

Finally, remember to make sure that your investigation follows all ethical and health restrictions required by the IBO: your research must not cause harm stress to any living creatures or health problems for humans, be interfering with private and confidential issues (e.g. medical records) or use materials which are directly dangerous to handle (radioactive, carcinogenic etc).

This might seem to be a lot to take in at once, but remember that after your Group 4 project and your countless lab experiments at school you should be able to **know many of these steps intuitively** and not learn them from scratch.

## Group 5 – Mathematics

The first thing to realize is that a Group 5 Extended Essay does not need to purely mathematical. Instead, it can take a mathematical look on other disciplines: engineering, the social sciences etc. As long as the focus is based on mathematical techniques (e.g. statistics) the scope is remarkably optional.

Even historical essays - mapping how mathematical ideas formed and developed - are fully acceptable. Thus, the formal research demands are not as strict as for the Group 4 subjects – you mostly do not need to

## Scientific Journals

The number of scientific journals is practically innumerable, and journals often exist for much more specific topics than one might expect. A good way to find appropriate journal, outside of speaking to librarians and professors, is to look in the bibliographies of the books you are using from your initial research.

In addition, simply using the Internet to search for scientific journals on your general topic, such as botany, chromatography, astronomy will yield a number of results. Though it should never be cited, Wikipedia provides a useful list of scientific journals that can be a nice starting point for locating appropriate titles.

[http://en.wikipedia.org/wiki/List\\_of\\_scientific\\_journals](http://en.wikipedia.org/wiki/List_of_scientific_journals)

Also, once you are looking for particular articles make good use of;

<http://scholar.google.com>

Many libraries subscribe to a number of scientific journals; however, it is very possible that they will not carry all the titles that you find. You may have better luck **visiting the library of a local university** if you have the chance. Most university libraries will allow you to browse journals freely and you can usually make use of photocopiers if you can't take individual issues home with you. Many journals have started to post their articles online.

gather your own data, but rather subject the data to **mathematical analysis**.

It is therefore advisable that finding sources and data should take up a smaller portion of your time than in other subjects. Rather, spend your working hours mostly on processing the data and make sure that you have the time to look at all calculations/tests at least twice.

### *Some general advice:*

Remember that your essay will need to be text-based and must be relatively readable to someone with a similar level of mathematical sophistication to an IB student. Thus, do consult written sources with such an approach to get a better feel for the technique.

Needless to say, having an up-to-date Excel programme and graphing calculator is necessary. But do not expect the mathematical analysis to be based solely on calculating – use these tools more as aids rather than essentials.

It might be difficult to remember to include theoretical debates, especially when working with statistical information: look at mathematical journals (use the advice from the Group 4 section on how to find these) and try and locate key areas of uncertainty etc.

Do not over-read: it is not desirable to have consulted too many sources: you should be able to demonstrate how every piece of material which you end up using in

## Finding mathematics

<http://eprints.maths.ox.ac.uk/>

Provides abstracts for everything from journal articles to theses.

<http://www.maths.ox.ac.uk/courses/material>

Provides lecture notes for a wide range of topics. This is, of course, a university resource, so don't feel like you need to learn everything about your given topic. Rather use it as inspiration for further thought.

your essay is contributing something essential to the investigation.

If possible, gather your own data. If you are writing about possibility in games and gambles conduct a couple of tests in different situations and do not simply rely on your own calculations.

## Research troubleshooting - Avoid unnecessary complications

Extended Essay research should not be overly complex: any ideas which would require you to consult a type of source (e.g. archival) which you have no previous experience of handling will not necessarily be a good idea: remember that you don't get points for the complexity of your research.

Similarly, Group 4 examiners will be more impressed by a simpler experiment that is effectively conducted and insightfully analysed than an overly complicated

experiment that is less successful. The experiment for one of IB's highest scoring Group 4 Extended Essays simply measured the pH of rainwater in two different cities. The author's in-depth analysis of the data and research to explain the pH differences earned him more points than a more complicated experiment would have.

Finally, your research process is meant to be fun and varied: there are not many requirements set in stone here, so make sure to enjoy it properly!

## Checklist

- Have you established an approach to meet your research question?
- Have you done appropriate background reading?
- Have you used both primary/experimental and secondary sources?
- Have you consulted several different types of sources?
- Have you consulted sources demonstrating different points of view?
- Have you made clear and thorough notes?
- Have you noted the *title, author, publisher, and publication date* for each of your secondary sources?
- Have you always acknowledged quotations in your notes?
- Have you always noted source criticisms and/or your own reflections?

# The Writing Process

*Now you have a research question and some research to help you in answering it. Where to go next? Simply sitting down and starting writing will not get you very far – most students attempting to do this (usually right before a draft deadline) end up getting stuck and confused halfway through. It's thus absolutely crucial that you prepare carefully: the writing process consists of several steps all of which are not necessarily about actually typing.*

Before you can do anything further, you will need to subject your data to **appropriate analysis**. Often, many of you will have done this parallel to your reading, but if you have collected a large amount of primary data, you will need to find ways of explaining the results and drawing appropriate conclusions.

**Look at the 'Analysis and Evaluation' section in the Assessment Criteria part, for more advice.** After you have processed your data, continue with the following guide to writing.

## *Reading the assessment criteria*

Hopefully, of course, you will have done so before beginning to research. It is, however, necessary to have a look at specific criteria for how to write introductions, conclusions and how to analyse. Also, it's important that you **familiarize yourself with the formal criteria before you write** and that you feel comfortable employing the necessary techniques: avoid the situation of a past student, who did not know how to footnote and thus ignored it throughout his first draft. The time it took to find the details for his quotes and paraphrases was definitely not worthwhile

## Outline and structure

*Doing this properly will help you!*

Use a good outline and structure to focus your writing and end up with a better essay than you otherwise would.

In your outline you will get an overview of your main arguments and what supporting evidence you have gathered. You will see how your data fits your analysis and ultimately how everything you have done connects back to your research question.

You will also need to choose how to present the material in the most convincing way. Make your final plan detailed and around 2 pages in length.

### Beginning your outline

Begin by processing your notes and summarising each source you have consulted. Think of answers to the questions such as 'what does this source tell me' and 'where in my essay does this source fit in'. Remember that a versatile source might be useful in several places in your essay; do not discard one just because you have found a place for it already.

When looking for answers to the questions above, constantly keep in mind that you are trying to answer another question – your research question! Each note and each step you take should be geared towards helping you to respond to your

research question. If you find yourself losing yourself in the details of your essay, that is, so to speak, starts generating its own questions and side-tracks then you probably are answering something that is too broad to fit into the Extended Essay format. Take a step back and refocus!

A useful way to get an overview of what you are doing, regardless if you are planning a physics experiment or writing a literary essay is to **use mindmaps**. Use it to connect your ideas and thought processes and at later stages in your writing

### Creating a plan/structure

#### *Groups 1 & 2*

Here you will have a great deal of **creative freedom** in how you choose to plan your essay. Usually, some teachers will not recommend that you overly plan a literature extended – headings, for example, could risk ruining the natural flow of your essay. Others, on the other

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Each note and each step you take should be geared towards helping you to respond to your research question.

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hand, will want you to hand them your plan with all your supporting quotes/information before your start writing.

What you choose to do should be based on personal considerations and those of your topic: for example, a question relating to one work only could require a clearer break-up, as it could otherwise risk becoming narrative.

You will probably find it easier to get an overview of your essay if you work with headers during your planning process even if you aren't going to write them out in the actual essay!

### *Group 3*

Here it might be good idea to make informed use of **headings and subheadings**. Again, these will have to heavily depend on your topic.

If you're having problems getting started the following templates should be useful (if only to spark your own idea process).

OUTLINE IDEA BY IDEA from the traditional views on the topic to the more recent).

## Sample structure (History)

Question: When was life in post-war Soviet Union normalized?

Subheadings:

*Defining Soviet normality*

*The end of the war: what had been lost and what was hoped for?*

*1948 as a turning point*

Comments: This approach has enabled the student to discuss any debates in the first subheading, as well as any methodological issues. The two subsequent headings allows for some in-depth source analysis. The third part allows for a clearer argument in answer to the question. However, the number of subheadings is a bit scant to allow for detailed analysis.

## Sample Structure 2 (Politics)

Question: Which social and political values should a modern British Conservative party seek to conserve?'

Subheadings:

*The ghost of the gent: problems of Tory self-perception in ideological context*

*The Iron Lady complex: how to be friends with the party*

*What is to be done? - a grassroots perspective*

*Gradualism for the 21<sup>st</sup> century: environment and culture*

Comments: The first two points of the outline deal with the common views of the Conservative party, both from an internal and external point of view. The focus on problems highlights the need for the party to reform itself to meet current demands. These points also allow the student to demonstrate knowledge of key debates etc. The third point draws from primary research (e.g. interviews with party activists) and shows popular perceptions of the party's direction. This also firmly roots the investigation in the present. Finally, the last heading allows for a more direct take on the question and directly indicates the complexities of 'conservation'.

## Group 4 Skeleton Structure

Introduction:

Research Question

Hypothesis and Explanation of Hypothesis

Necessary Background Information:

This information may be included in its own subheading but could also be incorporated into other sections.

Materials and Methods:

Discuss the materials and the specific procedure performed to collect your data.

Variables:

Discuss the variables and how you will control them

Data Collection:

Use graphs, tables, and diagrams to present the data you collected

Analysis of Data:

Use statistical tests, calculations, and other methods to analyse your data

Evaluation and Error Analysis:

Evaluate the effectiveness of the experiment, its shortcomings, and whether or not the research question was answered

Conclusion:

Discuss what the experiment showed, and whether or not your hypothesis was correct



OUTLINE BASED ON YOUR INVESTIGATION: useful if your research covered several separate steps simultaneously (different sample groups, looking at different regions)

SOURCE-BY-SOURCE OUTLINE: useful for those of you who have consulted many primary sources and would like to discuss them critically in order to answer the question.

TIMELINE OUTLINE: e.g. event-by-event.

Remember to always write down the **advantages and disadvantages of any outlining** you might settle upon. Ask yourself: which elements of the topic are not well presented in your outline? Have you given yourself enough room for extensive analysis?

#### *Group 4:*

Regardless of whether you decide to write an experiment-based or a literature-based essay, your final essay should **look like an extended lab report**.

Using the headings in the skeleton structure presented in the text box below will not only give coherent structure to your argument, but will help ensure that you address each of the necessary extended essay criteria.

Additional headings and subheadings can be added to meet topic-specific needs, but this general structure provides a viable model for a Group 4 essay.

## ***Start typing***

*Finally, after much hard work you are allowed to start writing up your ideas.*

Do not wait too long before embarking on this step - once you have a working structure, you should begin typing as soon as you can. Otherwise, you might forget some of your more insightful ideas or lose part of your focus. Write whilst you are still fully emerged in your project.

## **Writing strategies**

### *Writing slowly*

This means taking the time to make sure that each sentence flows

naturally from the other, making sure that you are incorporating quotes seamlessly into your text, noticing how your language is developing.

ADVANTAGES: Can make your end result more elegant. It can sometimes be difficult - no matter how good a writer you are - to fully edit a scruffily written first draft. You can also make sure that you have included all evidence in a balanced way.

DISADVANTAGES: Can simply take too long. Remember that your extended essay is not some form of *perpetuum mobile* – there are other things that you might need to work on as well. Also, your argument might not sound as forceful and you might lose focus at where you are getting at.

### *High-speed writing*

This might be useful even when you are not racing the clock. Sometimes you will need to get the essay out of your system as quickly as possible, even for stylistic reasons.

ADVANTAGES: You will be able to feel where your argument is going. It will also help you in developing a more forceful and convincing style.

DISADVANTAGES: You might lose out on important details or omit a certain step. Your writing might turn incoherent or rambling.

The best idea is, of course, to **develop a mixture of these two strategies**. It is often useful to write your introduction and conclusion slowly and with great care and then type up a sub-heading as quickly as possible. Pause and reread before moving onto the next heading. This

way your writing will become more dynamic and you can reap the benefits from both the approaches listed above.

Remember that writing is not as straightforward as it seems: the balance between slow and fast might seem obvious to some of you, but as you have probably never written an essay this length before you will not have felt this balance in practice.

Finally, make sure that you have time to proofread before you hand in your first draft. Equally, **do not become too perfectionist**: you will probably have ample opportunity to check for weaknesses in your writing style later on. When you get your draft back, look through your teacher's comments thoroughly and, again have a new look at the assessment criteria before preparing a final draft.

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Once you have a working structure, you should begin typing as soon as you can

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## Summary – Writing Process

- Familiarize yourself with the criteria
- Work hard on your outline and structure
- Make sure you are always responding to your research question
- Use a mix of writing strategies

# Assessment Criteria

*Treat the Assessment Criteria as your Extended Essay Bible and make sure that you don't miss out on any easy points simply because you haven't read them thoroughly enough. Consult this checklist before, during and after your completed assignment. Never ever disregard the criteria! Even if you feel that something is interfering with your own vision of the project. Most of the time, the criteria will be more helpful than they are limiting.*

The criteria can be found here:

<http://production-app2.ibo.org/publication/19/part/3/chapter/7>

## Research Question (2 points)

*“This criterion assesses the extent to which the purpose of the essay is specified. In many subjects, the aim of the essay will normally be expressed as a question and, therefore, this criterion is called the “research question”. However, certain disciplines may permit or encourage different ways of formulating the research task.”*

This criteria examines **how focused and well thought-through your essay topic is**. It does not formally need to be stated as a question - a tightly focused hypothesis will work equally well.

It is helpful, especially at an editing stage, to ask someone else to read through your question. As you will probably be caught up in your

own work, you might not notice clumsy syntax or oblique terminology.

If you feel like you need to rewrite it completely, refer back to the previous section of this guide. Since we have already discussed how you can work on improving your research question extensively we will limit ourselves to a checklist here.

### Checklist

- Is your research question clearly stated in your introduction?
- Does your research question “lend itself to systematic investigation”, i.e. is it appropriate and representative of your subject? Will it produce an analytical and argumentative response or a narrative repetition of already established facts?
- Is it focused and narrow enough? The word limit is there for a reason - never attempt a question if you think you could easily write a whole book about it!
- Does the question contain all the key words of your investigation?
- Is it written in a clear and unambiguous way? Can you read it through without ‘stumbling’ or needing to reread?
- Does your essay reflect and answer the research question properly?

## Introduction (2 points)

*“This criterion assesses the extent to which the introduction makes clear how the research question relates to existing knowledge on the topic and explains how the topic chosen is significant and worthy of investigation.”*

This essentially examines how well you ‘sell’ your investigation and how clearly you state why it is important and noteworthy for your given subject. This is your chance to explain why you’ve chosen your topic and what you have included in your research question. **Use this opportunity well.** Remember that an examiner will refer back to your introduction whilst reading, to check that you are following your own guidelines.

### Points to think about when writing your introduction

State your research question at the beginning and explain how you will go about answering it. In other words, outline your **methodology**. How did you research the question? Which sources did you mainly use? How did

you control potential errors? Don’t make this too detailed and definitely don’t try listing things at length.

Your introduction should aim to **contextualize** your question and situate it within your given topic and subject. Provide some background information, situate your ideas within a larger debate and mark whether or not you are saying something new and original.

Explain why your research is **interesting and worthwhile**: has it thrown new light on an old problem? In some subjects (mainly literary ones) it is acceptable to give this a slight personal tinge and talk about why the material had a special effect on you. In other subjects it is probably better to be strictly academic. Sometimes, this can be done in only an introductory sentence.

### Adding personal flavour – an example

“Most of us have seen incredible goals made by the football super-stars from what seems to be impossible angles and over human walls. It’s all about getting the ball to spin. Hence the research question is: *How does spin of a ball around the axis perpendicular to the velocity-gravity plane affect the path of the ball in air when launched?*”

Comments: This shows that the writer himself had a specific interest in finding out the answer to his research question, which makes this essay seem more engaging and thought-provoking. Also, a proper statement of interest will also provide evidence of contextualization.

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This is your chance to explain why you've chosen your topic and what you have included in your research question.

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Be careful with your **terminology**, it is a very good idea to provide your own chosen definition for key terms and briefly indicate whether there is any debate over certain definitions. If you are borrowing language from another discipline (e.g. using psychological terms to explain historical terms), please indicate this.

Make sure that your introduction is not too long - when

you first start writing it will inevitably be tempting to write at great length. 500 words should usually be considered a maximum for most types of extended essay introductions. In Group 4 subjects, where you will need to outline your method in greater detail, your introduction might need to be slightly longer.

If you get stuck writing your introduction, then simply write an outline and move on the main body of text. You will inevitably think of new angles and approaches as you write, so don't get the impression that your first introduction draft needs to be in any way final.

**Always, however, make sure that it reflects the content of the rest of the essay!**

## ***Investigation (4 points)***

*"This criterion assesses the extent to which the investigation is planned and an appropriate range of sources has been consulted, or data has been gathered, that is relevant to the research question. Where the research question does not lend itself to a systematic investigation in the subject in which the essay is registered, the maximum level that can be awarded for this criterion is 2."*

This criterion looks at your **data collection**, the general **planning of the investigation** and how well you have **linked** these steps to your research question. It also examines your ability to use correct and **appropriate evidence** to back up your argument.

Refer back to the 'Research Process' section above, for more

practical advice on how successful research should be undertaken.

### **Improving your investigation**

#### ***Quality and Relevance***

Check whether or not your material represents a fair cross-section of different possible angles and ideas. Remember that your **essay needs to be**

**argumentative:** i.e. be able to make a point in relation or in opposition to what others have said on the matter in the past or towards vindicating your hypothesis.

Finally, make sure that you address key writers/thinkers/etc. in your topic or field, to show that you have understood fundamental discussions and not just the fringes of the debate.

### *Quantity*

As already stated, the range of your sources and data is crucial. When in doubt, always read and research more. Also, remember that you can refer to several sources for one piece of fact; this just makes the fact better reinforced.

### *Critical thinking*

Remember that this criterion requires you to not only look at the number of items on your bibliography - it examines how well you have approached and worked with the material. Thus, make sure that you always **critically evaluate and discuss** most of your major sources.

For more empirically inclined essays you should also consider your **discussion of your variables**. Treat your own experimental method as a source and critically evaluate it.

### *Planning*

There needs to be evidence of solid and thoughtful planning. Make sure that you don't simply recount the content of your sources **but use them analytically**, to back up and support your hypotheses and

conclusions. There has to be evidence of your understanding then reasons for why you collected some specific data or included some source.

## Collection of specialized data

### *Diagrams*

When including a diagram to supplement your observations, you will also want to make sure that each important aspect is well labelled. This does not necessarily mean simply labelling parts of the figure, but may include annotations that highlight details of your observations, specific points of interest, or ideas that you plan to reference directly in the diagram or diagram caption.

### *Graphs*

When including a graph, your first concern should be whether or not you are using an appropriate graph to represent the type of data you are dealing with. If you have uncertainties about this, the link below has an explanation of the appropriate uses of the most common types of graphs.

## Types of Graphs

[www.preciousheart.net/chaplaincy/AuditorManual/11grphd.pdf](http://www.preciousheart.net/chaplaincy/AuditorManual/11grphd.pdf)

In addition to applying standard labels to the graph, as with the diagrams you may also include annotations or graphical features

(such as linear regressions) to draw the readers' attention to specific trends in the data.

### *Tables*

When including tables, you should include some **relevant descriptive statistics**, such as means, standard deviations, etc.

Remember that though you should include tables, graphs, and diagrams, they do not replace explanatory paragraphs (and they do not add to your word count).

Do not assume the your reader is able to fully understand the results of your experiment simply by looking at a series of numbers and graphs – use these figures as supplements, and let your paragraphs guide the reader through the data.

Also, remember to add a caption to any figure that you include, giving a specific explanation of what the figure shows.

## ***Knowledge & Understanding of the Topic (4 points)***

*“Where the research question does not lend itself to a systematic investigation in the subject in which the essay is registered, the maximum level that can be awarded for this criterion is 2. “Academic context”, as used in this guide, can be defined as the current state of the field of study under investigation. However, this is to be understood in relation to what can reasonably be expected of a pre-university student. For example, to obtain a level 4, it would be sufficient to relate the investigation to the principal lines of inquiry in the relevant field; detailed, comprehensive knowledge is not required.”*

What is considered important for this criterion is, of course, highly individualized. Remember, however, that you cannot get away without having done thorough and proper research.

Even if your examiner knows nothing of your topic, your own knowledge will determine the confidence with which you present your argument. There are, however, several ways of maximizing your points, using the information you already have.

### **Showing your understanding**

#### *Write Authoritatively*

Only include information you feel comfortable discussing: don't name-drop authors or terms for the sake of it, as most often it will be glaringly obvious that you do not know enough about them if you do not provide any explanation.

#### *Outline uncertainties*



Showing that you realize that some aspects of your understanding are stronger than others, will only benefit your essay. Thus, **reveal the gaps** of your methodology, the uncertainties of your sources and the areas where little source material is available. That way you can turn a lack of precise knowledge in certain areas into points for understanding.

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Your own knowledge will determine the confidence with which you present your argument.

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*Outline the Academic Context.*

Show that you have read and understood some of the relevant

debates surrounding the topic of your research question. You should also mention if you have located any particular ‘bald spots’ in the academic debate.

*Situate your own essay within the academic context*

Some students find this part frightening, but it's actually not as daunting as it seems. You don't have to be revolutionary: simply stating that you have reinforced the views already presented by someone else will not lose you any points.

Remember that even a really specialized topic (e.g. range of food stuffs available in 1930s Russia) will inevitably contribute something to a broader subject (e.g. living standards in the USSR under Stalin). Look at your own ideas creatively.

## ***Reasoned Argument (4 points)***

*This criterion assesses the extent to which the essay uses the material collected to present ideas in a logical and coherent manner, and develops a reasoned argument in relation to the research question. Where the research question does not lend itself to a systematic investigation in the subject in which the essay is registered, the maximum level that can be awarded for this criterion is 2.*

This criterion assesses to what extent your argument is clearly and precisely stated, explained and backed up by supporting evidence. The demands of this criterion need to inform most of what you choose to write about.

Make sure that your argument makes perfect sense throughout your essay and you will have no problems maximising this criterion.

### **Improving your argument**

Your argument will have to be, above all, **convincing**. Even if you



write about a controversial topic you need to be able to write in a way that will make the reader, at least temporarily, agree with your point of view. Practice this by presenting your general thesis/hypothesis with your five most important pieces of evidence to a family member, friend or teacher. Even if they are not experts in your given field, they will be able to comment on your persuasion techniques.

Your argument also needs to **unfold well**. This means that it has to be situated within a well thought-out structure. Design your essay carefully, so that each part supports your argument in some way and leads to the eventual conclusion. Constantly remind the reader of where you are going.

State or explain your argument in your introduction.

When writing it might be useful to keep the main argument or idea of your essay on a slip of paper or post-it next to you - that way you avoid losing track of your original idea. If you eventually change your mind, you will need to go through what you've already written to make sure that it fits with your new ideas.

Make sure that your argument addresses and/or **answers your research question properly**. If it does not, your essay will lose most of its marks in this criterion. It will also influence other parts (Analysis, Conclusion etc).

If any parts of your ideas are specifically complex, do spend enough time in your essay explaining them. Never forget to illustrate and

give examples, where appropriate. Do, however, phrase things as simply as you can - examiners receive ridiculous amounts of scripts and are not able to plough through unnecessarily long-winded explanations.

Use **supporting evidence**! An argument without evidence is essentially nothing more than an empty assertion. Remember that another idea or interpretation does not, in itself, constitute evidence. Never leave a statement without anything to back it up – don't pack your essay with vague statements such as *"Russia was a backward country"* or *"Behaviour is determined by the personalities of the parents..."*

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An argument without evidence is essentially nothing more than an empty assertion.

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Sharpen and define your argument by bringing up **relevant counter-arguments**. Then proceed to criticize these constructively (either by revealing conceptual difficulties or factual shortcomings). This shouldn't be too difficult if you have been summarizing arguments of various authors (see above: 'Research Process') throughout your research.

Remember: recognizing and criticizing arguments is not an innate skill - it's something you learn. The

## Helping your reader keep track of your argument

There are two very useful techniques you should learn. Once you have mastered these you will find them useful to whatever you write and, indeed, even when engaging in everyday conversation and convincing.

### Sign posting:

*“This leads us to another important point...”, “From this we can deduce...”, “Moving on, we find....”, “However, this evidence is not conclusive...”*

Phrases like these at the beginning (and, indeed throughout) your paragraphs will guide the reader and serve as mental aids.

### ‘Mini-conclusions’:

*“Thus, from this experiment, it can be deduced that...”, “... but, as shown from the above no generalization on this point can be made. “; “Even though the evidence is, at first, convincing, a closer look has revealed several fundamental flaws.”*

These will round off your paragraphs/headings and will reinforce the message you are making.

sooner you start practicing, the better.

## Problems and trouble-shooting

Investigate the premises for your argument carefully and check that they are not based on any logical fallacies.

### *Some common fallacies*

**STRAW MAN** A straw man is a presentation of an opposing position or idea in a way that emphasises weaknesses in that position or idea. This makes it much easier for you to criticize or attack that position and falsely makes your own position stronger. Beware of constructing straw men and always consider if you are portraying the opposing side fairly.

**APPEAL TO AUTHORITY** This means basing your argument on someone else’s expertise, along the lines of simple playground logic: “he said so, therefore it must be right”.

**CONFUSING OR BEING VAGUE ON CAUSE AND EFFECT** For example: “I am a liberal, therefore I believe in the freedom of the individual” or “Violent films are the cause behind the increased violence in society” (when in fact the cinematic violence could simply be a reflection of what is already going on.)

**BIASED SAMPLE** For example: “all cats I have met have been black, therefore all cats are black”.

**FALSE DILEMMA** ignoring the grey zone; “either you’re with us or you’re against us”.

Of course, the academic examples you will encounter are far

more subtle than the ones listed above, but it is useful to be familiar with the generic fallacies, as even the

Find more here:

<http://www.nizkor.org/features/fallacies/>

most nuanced of ideas can be guilty of them.

## ***Application of Analytical & Evaluative skills (4 points)***

This is quite a vaguely defined criterion and there is no fail-safe way of satisfying the examiner on this point. Usually, however, **a critical reading of your sources and a nuanced argument** will automatically include several evaluative and analytical techniques already so do not over-think this.

Generally, **analysis** tends to mean a detailed examination of your sources and material, from which you subsequently draw relevant conclusions. **Evaluation**, however, usually means critically assessing the weaknesses and strengths of the analysis.

These two techniques will inevitably vary greatly from subject to subject. For most of you, however, they will come naturally, as you will have covered and practiced them ceaselessly in class. Bear in mind, that the depth and sophistication of

your analysis and evaluation are not teachable skills: they are something you must familiarize yourself with on your own. Past students have found it helpful to look at their old essays in the subject and notice where their teachers have praised or criticized their analytical skills.

### **Some general advice**

Check that the bulk of your text is **not too narrative**. Extensive narration and recounting of fact is the main enemy of any form of critical thinking. The examiner will not be marking you for how well you remember the exact troop movements during the battle of Somme, unless you provide any assessment of why they were important for your topic.

Always read through each section after having written it to check that you have had some form of

### **Improving your analysis/evaluation**

If in doubt, structure your paragraphs/sections according to the following simple formula:

*Present -- explain -- discuss -- evaluate*

In simpler terms: state what you are talking about, what it means, what the different views on it are and how you have positioned yourself in the debate. You will doubtlessly have employed a similar technique in previous essays, but make sure that you include all or most of these steps in your Extended Essay.

discussion and not just presentation and explanation. Sometimes, writing about something you enjoy can turn into a form of list, as you try to present too much interesting information at once.

In groups 1, 2 and 3 your analysis should be incorporated into the majority of your essay and should not have its own section.

## Analysis and Evaluation for Group 4 subjects

For Group 4 subject, your analysis and evaluation need to form part of a separate section – you will probably have structured in this way in previous lab reports. Make sure to give this section enough time and words to make it effective. The requirements are more specific and detailed than for most other subjects.

### Example of a text with *little or no analysis* (English A2)

*“Heart of Darkness’ begins with an extensive view of a dark London and subsequently turns to Marlowe, who begins telling the story of his African adventures. He is a man of the sea and described as a ‘Buddha’, as he is sitting cross-legged. The rest of the novel is his tale, told in the past tense.”*

Besides being fragmented and oddly phrased, this text provides us with *no explanation* as to why the elements included are important or note-worthy – it simply recounts information from the text, without attempting to draw some conclusions from it. If you find yourself having similar tendencies, it might be a good idea to think: *Why did I include this information? What does the information tell me? What do I want it to communicate to the reader?*

Instead, a *more analytical* version of the text could read:

*“The backdrop for the Heart of Darkness is London – **commonly** thought of as bustling with life, light and the wonders of modern civilization. Conrad’s city, however, is ‘a place of darkness’, a terrifying tumour growing on the edge of the river. This grotesque treatment immediately **sets the tone** for the rest of the novel, **foreshadowing** the ‘civilized madness’ within Kurtz. This double-image effect is **further emphasized** by the introduction of a story-within-a-story, as focus shifts to Marlowe, the narrator for the rest of the novel. He is likened to a Buddha – he is sitting cross-legged – but speaks in a long-winded often-passionate way. Again, appearance and reality are **contrasted**.”*

The highlighted words are examples of how you can make your analysis more striking: always point and direct the reader of where you are going: **never analyse implicitly!**

## Example of analytical text (Economics)

*“As seen above, there are some fundamental differences between the two markets.*

*Regarding store locations, conventional retailers expressed difficulties, both financial and the access to important prime store locations, which are important for the business to run. The retailers regarded this as a barrier. The Internet-based retailers on the other hand did not at all express the same concerns about the initial infrastructure that is needed to start up business. A fully managed Internet site can be easily rented without sunk costs. They did not regard the infrastructure as a barrier. “*

### *Analysis of Data*

For some experiments, it is easiest to perform the analysis taking each variable in turn, where for other experiments it is more convenient to analyse your results trial by trial. There is no wrong way to write a data analysis section, as long as it is easy to follow, logically structured, and clearly addresses what is suggested by the data you have collected.

### *Calculations and Statistical Tests*

Include any calculations and statistical tests that you used to

analyse your data. For calculations, you should either annotate your steps or explain why you did the calculations. For statistical tests, you need to explain why you chose that test, and what the result suggests. Remember, now is the time to try to come up with explanation for all of your data and observations, so do not forget **to explain the significance of any calculation or test** you do.

### *External Sources*

It is also appropriate in this section to bring in the external

## Learning about statistical tests

If you are unsure of what types of statistical tests to perform, the link listed below provides a long list of test and what they are used for. However, most needs can be satisfied by a standard T-Test or ANOVA, so it is recommended that you try to use those first.

<http://home.ubalt.edu/ntsbarsh/stat-data/Topics.htm>

The additional link below leads to a site that will allow you to download an add-on for Microsoft Excel known as Merlin that expands the types of graphs you will be able to create and adds additional tools that allow you to perform more statistical tests. It also has tools that allow it to suggest which type of test you should use based on the data that you have.

[www.heckgrammar.kirklees.sch.uk/index.php?p=10310](http://www.heckgrammar.kirklees.sch.uk/index.php?p=10310)

sources that you used to develop your experiment and hypothesis. Compare your results with what these sources led you to believe and to the results of any similar experiments. What may have caused your experiment to yield similar/different results?

### *Evaluation*

This section of your essay should address four main points:

**WAS THE RESEARCH QUESTION ANSWERED?** The answer to this question should almost always be 'yes'. Your experiment and procedure should be designed so that your research question is at least answered in part. If it is not, it will be difficult to complete your essay and you will have to rewrite parts of your essay. If your research question was not answered due to a flaw in your procedure or a variable within your control, it is recommended that you perform the experiment again to gain more useful results.

**WHAT WERE THE SOURCES OF ERROR?** When addressing sources of error,

consider uncontrolled variables, human error, and systematic error in your measuring devices, in addition to anything else you think may have influenced your results. Whenever possible, try to calculate a specific uncertainty or address the potential extent of the effect of each error source on the data.

**HOW EFFECTIVE WERE THE TECHNIQUES USED?** Address the effectiveness of your procedure, including the method you developed and the materials used. Is there any way that some of the sources of error could have been eliminated? Were any steps particularly inconvenient or difficult to follow? What other problems did you run into?

**WHAT QUESTIONS HAVE BEEN LEFT UNANSWERED?** Discuss the limitations of your experiment. What new questions has your experiment brought up, and what would need to be done to further this investigation?

## ***Use of language appropriate to the subject (4 points)***

*Here you are assessed on how successfully you employ academic language appropriate to the subject. Again, this is something that is highly dependable on your chosen field and for some this will come more naturally than others.*

Remember that a linguistic criterion is not based on how nicely you write - the examiner will not grade your punning expertise or your

proficiency in smooth-flowing alliteration, especially if you're writing in Physics. Save your

extreme literary flourishes for a World Literature Assignment.

## General guidelines

Be careful whilst reading and notice how actual academics write their texts. This will allow you to find the right tone more easily. No one will expect you to write like a seasoned university professor whilst in the IB, but reading texts written by experts will take you one step closer towards sounding like one.

Make sure to always include **subject-specific terminology** relevant to your topic. This will be more obvious in some subjects than others. Whilst reading make a list of terms or expressions which you would like to employ in your essay.

### *Complexity*

Having stated the importance of an academic style, it is **also necessary that you write naturally**. Putting complex words in your essay but not using them correctly will not impress the examiner. Consult a dictionary if necessary or choose a simpler language that you are more in control of. Similarly, overly stilted and formal language that doesn't flow well is never a good idea in an essay of this length. You should be able to read it without having to go through each section several times.

EXAMPLE: This essay will focus mostly on this invitation, the “welcome antidote” element of the question, as it allows us to investigate the hybridity and

semiotic bricolages, instead of overstating the centre-to-periphery diffusion that has signified much early historiography on the matter.

COMMENTS: Long, rambling sentence that does not put a clear point across. Packed with vocabulary which is not put into context - it is definitely not clear that the author fully understands what a ‘semitotic bricolage’ is.

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No one will expect you to write like a seasoned university professor whilst in the IB, but reading texts written by experts will take you one step closer towards sounding like one.

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### *Colloquial language*

Avoid colloquial language. Writing naturally does not mean writing as though you were speaking. Of course, unconventional usage or inclusion of new, edgy vocabulary can have a striking effect, but only when done right. When in doubt, play it safe.

EXAMPLE: “*And then you think that most would have preferred bio rather than math, but actually...*”

COMMENTS: Here, both the terminology (‘bio’, ‘math’) and the sentence structure are far too informal.

## Extracts demonstrating an appropriate use of language:

GROUP 1: *“The striking ability of the bell jar to evoke Esther’s multifaceted entrapment, allows the reader to appreciate that her ‘madness’ does not stem from irrationality, but that it is instead a defiant reaction to the limitations of the feminine role itself.”*

COMMENTS: This is one long sentence, but the author avoids confusion by making sure to use appropriate sub-clauses and punctuation. The language is complex and academic and employs a near-literary register itself. It does not fall into jargon, but manages to show levels of ambiguity within the text (*‘madness’*) which is essential for Group 1 essays.

GROUP 3: *“In order to understand The Dreyfus Affair in its entirety, one must understand the socio-political context from which it emerged; the French were still recovering from their defeat in the Franco-Prussian War of 1870-71.”(History)*

COMMENTS: This example shows that subject-specific terminology does not mean knowing vast numbers of specialist jargon. Here, the subject is revealed simply through the use of, for example, specific events and dates. Also, the language clearly shows the sequence of events, while still providing some form of analysis.

GROUP 5: *“My approach to the problem was to create a program that would compute the total stopping times of a wide range of starting values  $n$  (i.e. the number of altitudes comprised by their forward orbits until they first reach 1) and hence to try to find patterns in the behaviour of the stopping time function, denoted by  $(n)$ .”*

COMMENTS: Needless to say, this extract uses subject-specific terminology well. It does however also provide clarity: the writer puts complex explanations in brackets and not in the running text, uses linking words (e.g. hence) and keeps the rest of his language succinct and simple.

*NOTE! Use linking words: thus, hence, furthermore, therefore, however, subsequently, consequently, alternatively... These will help you achieve an essay that flows well and seems to be clear and coherent.*



## Common pitfalls for scientific essays

Because of the **technical nature of the sciences**, it becomes especially important that your language maintains clarity and fluidity. Often, too much unnecessary detail can make this impossible.

### *Sentence structure*

A good rule of thumb is that either your vocabulary or sentence structure needs to be easily accessible to a reader. For example, when you are dealing with necessarily difficult or technical scientific language, your sentence structure should be simple and more straightforward. Play a game with yourself: try to see how much of the sentence you can delete while still making the point you wanted to. You may be surprised how many unnecessary phrases and clauses you will find.

ORIGINAL: Through this investigation, by way of studying the different factors that affect enzyme activity, the different potential effects of these variations on the human body activity were explored.

ADJUSTED: The aim of this investigation was to study factors affecting enzyme activity and their resulting influences on the human body.

### *Limiting detail*

The other option, if you find yourself attached to a particular

sentence structure, is to simplify your language. This may involve eliminating excessive adjectives and descriptors, limiting the number of technical terms and simplifying all other language, or providing definitions of terms earlier in your text so that the vocabulary will be familiar when the reader reaches this sentence.

If you are intent on including a particular detail, but it disrupts the fluidity of your essay, do not forget that you may use your footnotes, tables, and charts to add clarifying details.

ORIGINAL: The number of molecules configurations with the chemical formula  $C_{30}H_{82}$  is 4,111,846,763.

ADJUSTED: There are about 4 billion possible configurations of  $C_{30}H_{82}$ .

### *Becoming too general*

Although too much detail can be a problem, being too general can mask your understanding of your topic.

This is especially true when discussing the scope of your investigation, your experimental procedure, and your analysis.

ORIGINAL: The samples were moved so that all variables would remain constant.

ADJUSTED: The samples were move to a refrigerator so that they would be sealed from the environment and kept at a constant temperature of  $5^{\circ}\text{C}$ .

## Conclusion (2 points)

*“This criterion assesses the extent to which the essay incorporates a conclusion that is relevant to the research question and is consistent with the evidence presented in the essay.”*

It is important for you realize, however, that an Extended Essay-conclusion is different from any traditional variety. Thus, make sure that you follow the following advice carefully.

### Points to include

When reading the points that you should include remember that your conclusion should be presented in the final version of your essay as a seamless whole. Do not write each point separately but work to join together the contents of each and to make your language flow.

#### Research Question

Restate it and make sure that it has been answered by the end of the conclusion.

#### Summary

Briefly go through your method again, if necessary. Then proceed with a condensed version of your main points and arguments. Be brief and succinct, but make sure that you don't omit anything crucial.

#### Problems

Locate and discuss any complications resulting from your research: did your laboratory experiment have any crucial flaws? Should you have included any primary sources alongside your historiography?

Don't be overly self-critical - you still need to promote your own ideas - but it is important for the examiner to see that this is academic, self-evaluative writing and not a propaganda piece. Finding flaws with your own methodology shows that you have learnt something beyond the purely factual. This is especially true if you can suggest remedies to the problems.

What is most important is that you can convey an image of yourself as a thoughtful and reflective learner.

#### Further Questions

The IBO wants the Extended Essay to awaken your curiosity - mention everything, which you have learnt from this project, but also things which you would like to look at further. Make a list of these questions as you write the main body. However, don't use this section as a lazy dumping-place for any ideas, which should have been included in the essay.

EXAMPLE 1 (ECONOMICS): *“...the standard of living did improve for the gum collectors after forming a producer group (...) Of course, a new question emerges - will the operation of a producer group continue to be favourable to the gum collectors?”*

EXAMPLE 2 (PHYSICS): *“Quite a few questions emerge from this*

*investigation. It would have been interesting to test different surfaces.”*

## Style notes

Keep a good **balance between assertion and nuance**. Avoid labelling anything as ‘wrong’ and instead keep an open-minded approach even when pursuing your own ideas.

Do **not include any including new information**, as this will detract from the focus of your conclusion. This is not an exam essay: if there is anything you remember at the last minute, you should put it into the main body.

Avoid a too personal tone: the examiner wants to know primarily what you have **learnt as a student of your subject**. Writing about heartfelt moments with interviewees

or personal epiphanies might work sometimes, but most often you should keep the relationship with your extended essay business-like - remember the word limit! (This doesn’t mean that your essay needs to be dry as a twig either, as has been mentioned your personal development is a part of the goals of the Extended Essay process, just keep it limited)

There is no clear-cut structure for the conclusion - just remember to include all required elements in relatively logical order. Make sure that your conclusion answers your question (or explains why your question could not be answered) and ends on a positive note-

The length of the conclusion will depend on the subject, but a good rule of thumb is to make your conclusion match the length of your introduction.

## ***Formal Presentation (4 points)***

*“This criterion assesses the extent to which the layout, organization, appearance and formal elements of the essay consistently follow a standard format. The formal elements are: title page, table of contents, page numbers, illustrative material, quotations, documentation (including references, citations and bibliography) and appendices (if used).”*

This is usually a tedious but relatively easy way of scoring points. Therefore, it is important that you do not omit anything: go through the points below carefully with your finished essay in hand. Also, bear in mind that an essay that exceeds 4000 words will receive no marks in

this category. You will undoubtedly have encountered stories of students sending in exceedingly long essays and gaining top marks, but it is against your own best interests to be reassured by these urban legends.

The criterion addresses the quality (and existence!) of your

layout, certain formal elements and how you have documented your research.

## Layout, organization and appearance

This part of the essay depends primarily on your own personal preferences. It is, however, important to remain *consistent* throughout: use the same font style and size and the same style of heading throughout the essay. Feel free to divide your essay into 3-4 *sections* (either informally, or with clear sub-headings), but remember that it is still an essay, so try not to disrupt its natural flow too much and only divide if it will facilitate the reading experience.

Incorporate graphs, tables and necessary illustrations well and make sure that these are referenced, numbered and provided with **a brief yet clear explanatory caption**. Again, be consistent and place this additional material appropriately so that it doesn't disrupt the flow of a paragraph or section. If needed, put some material in an appendix.

Think of this as the packaging of your Extended Essay; after having worked hard on it for a long time you will want to present it advantageously.

## Formal Elements

### *Title Page*

Should have your clearly stated **research question** at the centre and also include **your name, candidate number, date** and the

final **word count** of your essay (excluding abstract, bibliography, footnotes and appendix).

### *Table of contents*

Should include all formal sections of your essay, as well as any personally imposed sub-sections marked with headings. Remember to have *page numbers* included in the lower right-hand corner of your essay as well.

### *Illustrative material*

See above ('Layout, Organization and Appearance').

## Documentation

### *Quotation*

When typing your essay always use quotation marks when you are quoting directly, regardless of how you will format the quotations later. It does not matter what type of source is that you are citing either.

Make sure that you are not writing something in your essay which was initially written by someone else. Don't allow yourself to be beaten by a good short-term memory and do not write and read simultaneously - allow the ideas to sink in properly and become incorporated in your own thought process.

Be careful when paraphrasing to rephrase the entire passage, even a few words left in the same order can constitute plagiarism. This is still true even if you have referenced your paraphrase correctly.

Finally, incorporate your quotations into your text well.

## Referencing

A good rule of thumb is to attribute everything! When referencing it is better to have one footnote too many than to miss attributing some idea and appear to be plagiarizing someone else's work.

Always acknowledge quotations (obviously!), paraphrases, ideas or theories you knowingly have taken from elsewhere, illustrative material you have not made yourself and statistical data or information found in some source.

Most often you will know whether or not you've taken an idea

from someone else. Always reference this. However, many students find it difficult to distinguish between an idea that is original to the source and common knowledge.

Do not reference if the information is trivial or uncontested, neither "*Jean Calvin was French*" nor "*The previous capital of Poland was Kraków*" stand in need of a reference.

Do reference any controversial statement.

Do reference statistics or data results.

## Examples of quotation

### EXAMPLE 1:

Plath portrays Esther as attempting to combat her feeling of entrapment within New York's artificiality when she "piece by piece" feeds her "wardrobe to the night wind." (1999:118).

Comments: Breaking up quotations and incorporating them into the sentence makes for more comfortable reading but still acknowledges the source properly.

### EXAMPLE 2:

At our first encounter with him, he seems to look at the world, and life as a horrible inferno, when a car passes, that the Prime Minister supposedly is sitting in, and that stirs up commotion.

*Septimus thought, and this gradual drawing together of everything to one centre before his eyes, as if some horror had come almost to the surface and was about to burst into flames, terrified him*<sup>1</sup>

This car seems to receive importance and symbolic value from the spectators. The spectators speculate wildly in what state official might be seated in the car.

Comments: If you need to include any longer quotations, do it according to the above formula: create an indent and put the quote in italics. There is no need for quotation marks. Always remember to reference!

## How to paraphrase successfully

As has been mentioned already, it is important that you avoid quoting when you paraphrase; you will be penalized for lack of quotation marks, even when you reference correctly. Ways to avoid this could be:

- When taking notes only write down **key words** from the text and not whole sentences.
- Always use a **synonym** when in doubt.
- By **evaluating a source critically** you will have processed it before you start writing.
- Do **not read and type**; by looking at a text as you type you will find it incredibly difficult to find your own words.
- **Break down the structure**; by not putting the ideas in the exact sequential order of the original you will feel less tempted to quote directly.
- Do **not paraphrase excessively**, it is not recommended that you recount everything a source has presented: by being selective and analytical you will avoid sounding like someone else.

Think of **the audience**, both of your own text and of the one you are reading. Common knowledge will inevitably vary depending on subject group. For example, in Biology *“Visual perception is obtained through millions of tiny cells in a small part of the human eye”* would not need a reference, as most Biologists would be familiar with this information, whereas *“The photoreceptor cells are a special type of neurons that change shape when they absorb photons...”* would need a reference.

### Formatting your references

Use the type of referencing which you feel comfortable with and which you have used before: the most common one is **footnoting**. If you are using Microsoft Word, or equivalent, this should not be

difficult: simply look under ‘Insert’ or ‘References’ (depending on what version you are using) for ‘Footnotes and endnotes’.

The main advantage of the footnote is that it does not overload your text with too many elements – a small, simple number is all that is needed. Do not, however, get ‘footnote disease’ – i.e. trying to avoid the word limit by cramming information into a footnote. Use it for referencing purposes only.

For more information, consult: <http://writing.wisc.edu/Handbook/Documentation.html>

## Online bibliographical styles

The following is a list of appropriate bibliography styles, the subject they are most commonly used for, and a website that outlines its individual specifications.

AMA – medicine, health, and biological sciences

<http://www.liu.edu/cwis/cwp/library/workshop/citama.htm>

APA – psychology, education, social sciences

<http://writing.colostate.edu/guides/researchsources/documentation/apa/reference.cfm>

APSA – political sciences

[http://writing.wisc.edu/Handbook/DocAPSA\\_RefList.html](http://writing.wisc.edu/Handbook/DocAPSA_RefList.html)

CSE/CBE – biology and other sciences

<http://library.osu.edu/sites/guides/cse/d.php>

Chicago – Any Subject

<http://library.osu.edu/sites/guides/chicagod.php>

MLA – literature, arts, and humanities

<http://www.studyguide.org/MLAdocumentation.htm>

Turabian – Any Subject

<http://www.libs.uga.edu/ref/turabian.html>

## Bibliography

### *Bibliography styles*

There are a number of different organizations that produce style guides and each has its own specific format for creating a bibliography. It is not particularly important which style you choose, but it is important that it is **consistent with the writing style you use in the rest of your essay**. It is probably easiest to use the style taught by your A1 teacher or suggested by your Extended Essay supervisor. However, if you were not taught a specific writing style, you can use the following guidelines.

Regardless of the bibliography style you chose, you should always **alphabetize** all of your entries and either double-space your bibliography or put a space between each entry. If an entry is longer than one line, indent all subsequent lines

### *What to Include*

Your bibliography should not be a listing of all the sources that you came across during your research process. Rather, it should include **only the sources that you specifically cited or quoted in your essay**. If there are sources that you do not end up citing but feel that you still owe them some credit, you may cite them in your introduction or in an acknowledgement.

## ***Abstract (2 points)***

*“The requirements for the abstract are for it to state clearly the research question that was investigated, how the investigation was undertaken and the conclusion(s) of the essay.”*

This, for most of you, is something completely new - initially it might seem difficult to distinguish an abstract from an introduction.

It might be useful to think of your abstract as a more academic version of a dust jacket blurb<sup>2</sup>; it is **about the rest of your work**, and it provides an overview of it, but it does not actually form part of it. Essentially what an abstract does is summarizes all the important features of your Extended Essay.

### *Do's and don'ts of abstract writing*

- **Do** write your abstract absolutely last, but place it first after the title page.
- **Do** not exceed 300 words, your abstract should have its own word count underneath the abstract itself.
- **Do** include your research question.
- **Do** explain your investigation and method; naturally you will need to be brief.
- **Do** state your main argument and conclusion.
  
- **Do not** make a lengthy presentation of why your topic is interesting - leave that for your introduction!
- **Do not** include anything that you do not include in your actual essay.
- **Do not** include any whole sentences or paragraphs taken directly from your main body (apart from the research question). In other words paraphrase your essay.
- **Do not** include detailed evidence or examples.

All abstracts follow the same formula regardless of which subject they are written in. Don't worry if it sounds overly dry and formal: simply try and stick to the guidelines and you should do well on this criterion!

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<sup>2</sup> Dust jacket blurb – the descriptive text on the back of a book or the film synopsis on the back of a DVD casing.



## Example 1: English A2

### ABSTRACT

The aim of this essay is to answer its research question “**how do the protagonists of *Mrs. Dalloway* and *Hamlet* differ in their development as a consequence of their confrontation with death?**” The essay does so firstly by analysing how the protagonists develop in *Mrs Dalloway*, where death is presented as a prosecuting element to Clarissa, reminding her of her inevitable aging. Her confrontation with death turns out to be a great aid in her development as both a person and character as it helps her find acceptance to life. However, the essay shows that the development of Septimus, the second protagonist of *Mrs Dalloway*, is quite different to that of Clarissa. Septimus’ confrontation with death, which is actually a physical encounter with death incarnated in his late World War One officer, causes him to develop firmer and firmer beliefs in that death serves the role as a liberator of the pains of life. This results in Septimus committing suicide and creates a clear contrast to Clarissa. Secondly, the essay analyses how the protagonist develops in *Hamlet*. Here Hamlet confronts death incarnated in the form of his late father’s ghost, and develops to be vindictive, mad and suicidal. This is also seen in the way he changes from viewing death as a mean of vengeance, to a liberator of suffering and a director of divine justice. It is also shown that his beliefs concerning death make him contradictory to the norms of his society. Finally, a comparison of how the characters in *Mrs Dalloway* and *Hamlet* develop concludes that at some point after their confrontations with death, all protagonists develop suicidal thoughts. However, it is also shown that both Hamlet and Clarissa develop from being suicidal to embracing life, as oppose to Septimus who develops to choosing death instead.

Word count: 299

COMMENTS: This abstract covers most of the main points of the essay well. It does, however, not mention **anything about method or investigation** – this is still essential to mention, even if it might seem obvious for a literary essay. Also, the abstract has somewhat the feel of a list – **make sure to divide everything it into smaller paragraphs** if necessary to avoid it sounding like a running commentary. Finally, there is **no need to include details** from the text (e.g. the World War One officer) – focus on the broader picture instead.

## Example 2: *History*

### ABSTRACT

The aim of this essay is to determine **why the Soviet Union refused to accept the Marshall Aid**. It will discuss why Western-Soviet relations deteriorated in 1947, and why the Soviet Union finally decided to announce its nonparticipation, by examining Soviet sources relating to the Marshall Plan, and interpretations of events leading up to the rejection of the Marshall Aid. Furthermore, it will try to assess what implications the conclusions reached in Moscow regarding the American motives behind the plan, and the possible effects it might have on the Soviet Union, had on Soviet policy.

The events that will be scrutinised are The Moscow Council of Foreign Ministers, Marshall's Harvard speech, the Soviet economist Eugene Varga's report on the Marshall Plan, a telegram from Novikov, the Soviet Union's ambassador in Washington, to Foreign Minister Molotov, the Paris Conference on the Marshall Plan, and a meeting between Stalin and Klement Gottwald. The essay has been restricted to deal directly only with events that occurred in 1947.

It will conclude that it was not so much the belief that America wished to gain economically by offering aid to Europe as the Soviet fear of reduced influence in Eastern Europe, and perhaps also Stalin's extremely suspicious personality, that caused the Soviet Union to finally decide to not participate in the aid programme.

Word count: 220

COMMENTS: A good abstract. It **includes the research question, the method, the focus and the conclusion**. No great detail is given – only specific events. It is easy to read and the writer has clearly processed the material before writing the abstract. It might sound slightly uninspired, but would probably still score most points – the marks awarded for the abstract are mostly technical rather than stylistic.

## Example 3: Biology

### ABSTRACT

The aim of this investigation is to **study factors affecting enzyme activity and their resulting influences on the human body**. The three specific factors in question are pH level, temperature, and enzyme concentration. Furthermore, their optimal and extreme levels are being studied to properly analyse what conditions can be detrimental to a human through the process of enzyme denaturation. The overall purpose of the study is to determine to what extent significant changes in these factors can prove harmful.

The investigation splits into three categories, with in-depth focus on each separate factor. pH level is addressed first, under which the diseases of acidosis and alkalosis fall. The relationship between pH level and rate of enzyme activity is analysed with supporting detail and presented through a chart (A). The second factor, temperature, is addressed in a similar manner. The relationship between surrounding temperature and rate of enzyme activity is also presented through a chart (B). The personal research comes into play with the third factor: enzyme concentration. The experiment done focused on this factor, and was carried out by varying concentrations of enzyme and measuring resulting reaction rate. This portion of the research process is the most credible because of the data presented as support.

The research and the analysis of the experiment overall supported the original question fairly well. It was shown that pH and temperature do have specific ranges within which enzymes can function properly; outside these ranges they denature. The slightly different trend appeared in concentration, where enzyme rate levelled off after a certain range, as opposed to stopping all together. Thus, the trends of the factors were properly analysed and researched.

Word Count: 274

**COMMENTS:** The abstract clearly addresses **the three necessary components** of an abstract listed in the criteria, and is very clear about both the research question and the conclusion. However, the **discussion of the scope of the investigation is somewhat lacking** and not particularly clear. Rather than simply referencing the charts in the essay that illustrate the results, this portion of the abstract should discuss the investigation and the research that led to those results.

## ***Holistic Judgment (4 points)***

*“The purpose of this criterion is to assess the qualities that distinguish an essay from the average, such as intellectual initiative, depth of understanding and insight. While these qualities will be clearly present in the best work, less successful essays may also show some evidence of them and should be rewarded under this criterion.”*

The most elusive of all criteria: it awards everything from new discoveries to evidence of intellectual zeal and ambition. It is useful to remember the Holistic Judgment when you are choosing your topic: **originality and creativity** are awarded, even if the rest of the criteria encourage you to safely stick to certain guidelines. Don't necessarily feel that your essay needs to be groundbreaking; usually your own curiosity and interest in your topic is all that is required.

### **Some general suggestions**

Choose your question with care. Choosing a topic that interests you will make you more likely to produce lively and stimulating answers.

React to stimulus: when you read something that amuses you, or makes you think about something in a new way, include it in the essay somehow. It is important to remember to keep your text dynamic; simply going through the motions of explanation and analysis, quoting and presenting evidence, is likely to make both you and your reader drowsy.

Remember **that originality and quirkiness** are not synonymous: writing about 1950s

pulp fiction can be fun, but can also result in affectedly gimmicky writing. The success of your essay often depends on how seriously you treat the topic: you will need to regard it as worthwhile yourself.

Make sure that you know about recent general developments in your field - do not simply stick to 'the greats'. Applying a new technique, approach or method to an established topic shows that you are being intellectually courageous and not simply recounting other author's ideas. Sometimes you will need to go slightly out of your way to achieve this. Good places to start could be:

#### ***Groups 1 & 2***

Literary magazines often present key debates and review works from new perspectives, but do so in a more entertaining and accessible way than formal literary criticism. Good ones could include everything from *Times Literary Supplement* to something more flippant, like *The Believer*.

#### ***Group 3:***

This will inevitably depend on your given subject, but looking for recently published anthologies discussing conceptual issues usually proves to be a good idea: e.g. David

Cannadine (ed.) *What is History Now?* Only read a chapter or contribution that would most benefit you and don't be too put off by any academic jargon.

*Group 4 & 5:*

Don't necessarily turn to popular science. Instead, a careful look at different journal articles (see above, 'Research Process') should give you an indication of what some of the major discussions in your subject could be.

### Summary – all the criteria at once

Research Question (2 points)

Introduction (2 points)

Investigation (4 points)

Knowledge and Understanding of the Topic studied (4 points)

Reasoned Argument (4 points)

Application of Analytical and Evaluative skills (4 points)

Use of language appropriate to the subject (4 points)

Conclusion (2 points)

Formal Presentation (4 points)

Abstract (2 points)

Holistic Judgment (4 points)

# Getting stuck and other problems

*Working on an Extended Essay can be frustrating. You have to juggle a lot at once: being creative and thoughtful whilst simultaneously thinking about specific criteria and meeting deadlines. Your teachers will constantly be reminding you that this is your final year and that it's really important to make the most of it. There will be times when all that importance can be pretty crushing and all you really want to do is put a duvet over your head and go to bed. There is no way of avoiding these problems completely, but there are methods tailored to minimize their effect on your actual work. Below you can find a description of the most common ailments and how to deal with them.*

## **Writer's Block**

Everything you write seems somehow wrong or uninspired. You spend hours staring at the screen, typing a little and subsequently erasing. Writing becomes slow and painful and you spend a lot of time getting very little done.

The main solution is to force yourself to write freely. Make sure that you know your plan and subsequently type up a paragraph or section as quickly as you can. This is better than over-thinking grammar and style, which usually leads to stilted, forced results. It is always more comfortable to perfect an existing text than to get overly fed up with the process halfway through writing.

If this still does not work, try changing your setting. You will be surprised at how much focus a new work place can generate: many think that they will be more comfortable in their room or in another familiar place, but actually end up feeling bored and tired. Go to a new library, a café (sometimes, contrary to common belief, background noise

can be stimulating) or even to your kitchen table. Usually walking somewhere to do your work will separate the work and leisure spheres of your life. Working with friends could also be a good idea: having someone to talk to at regular intervals will help to dispel any built-up uncertainties or anxieties. Experiment with other changes as well: change music, turn the music off or on, work with an open window, and take small breaks.

Never identify yourself with your essay either. Try and beat an 'all or nothing' mentality by carefully determining how much time and energy you can lavish on the essay and what you wish to gain from writing it. Finally, writer's block could also be a symptom of more specific problems: procrastination or stress (see below).

## **The Mid-way Crisis**

You have already written half of the text painlessly, when you realize that you are finding it increasingly difficult to continue. This can be caused by a temporary lapse in motivation: if you began everything

on time and you are progressing on schedule, the whole project might seem a bit predictable. Other reasons can be fatigue or a sudden realization that you are not exactly sure of where you are going with the essay.

Here it's really useful to talk to someone: this could be your supervisor, a class mate or an expert in your given field. Usually finding outside pressures to complete a task will stimulate your internal ones and give you more of an incentive to continue.

If this does not help - take a break. The EE is not a Herculean task: it should definitely not require all your waking attention. Even if a deadline is coming up, meals, daily meetings with friends and extra-curricular activities are still really necessary. The IBO definitely does not require you to become a super human (even if it sometimes might feel like that).. Also, do a bit more reading: remind yourself why you chose the subject in the first place and get some new ideas!

## ***Stress***

Stressing about the Extended Essay can reach almost ritualistic levels in some students, but remember: *it's actually not that bad*. It's actually pretty fun. Don't get too perfectionist about the essay and don't let the idea of bonus points and/or university applications get in the way of actually enjoying the assignment. At the end of the day, your extended essay result is in no way a final statement about you and your abilities. Many have received

C's and D's for essays in subjects that they are now studying at top universities. Allow yourself to relax and do not worry too much.

Sometimes, however, you will tense and find it difficult to relax, even when you are not feeling particularly stressed about the actual outcome. Writing large amounts of text or reading can be tiring and pulling late-nighters will inevitably drain your mental resources. The usually advice of sleeping, eating and exercising properly really are effective - having a healthy, balanced lifestyle will help more in stress-management than you think. But even a 30-minute walk or a couple of neck stretches can be helpful in providing immediate relief.

## ***Procrastination - the act of 'doing it later'***

Most of you should be overly familiarized with this term by now - if not through personal experience then at least from observing others. Sometimes even the greatest plans, outlines or ideas can crumble when you actually don't carry them through. This might be caused by several factors (performance anxiety, lack of confidence or over-loading yourself with other tasks), but usually nothing beats deciding to start. Cushion this well by making it comfortable to begin your work: make some tea/coffee before you sit down and have something entertaining to look forward to at the end of the day.

Also, many problems with extended essay procrastination stem

from the fact that you lack the usual framework of group pressure, or work camaraderie. A good idea might be to arrange with other students to read and discuss each other's drafts. Hearing their opinions is not only useful for the content of your essay; it will help you break out of any procrastinating lethargy. And finally, re-read the reasons for writing the extended essay at the very beginning of this guide. This might help you get some perspective on what it is you are doing.

If none of these simple methods work, or if your postponement of tasks is turning into an insurmountable problem, you will need to think about your procrastination more carefully. Firstly, determine what makes you procrastinate: for some it is the promise of relaxation or entertainment, for others it is fear of failing at the given task. If you fall into the first category you will generally tend to persuade yourself that you 'don't care' or that it 'doesn't matter'. One major step toward solving such thinking errors is to *actively* notice when you fall into the trap of minimizing the task. Each time you catch yourself thinking in a way which allows you to procrastinate, make yourself work at least another hour. You will usually realize how much you actually have to do and thus adjust your behaviour accordingly. Finally, award yourself *after* you have finished one part of the essay.

If you belong to the second category – you are *frightened* of the task – you will have to think about things differently. Usually the causes

of this kind of procrastination are complex – low self-esteem, perfectionism or feelings that the task is 'too big to handle'. Usually a good way of dealing with this is to face the problem straight away: if researching scares you (because it might show you how little you know about the topic) remind yourself that the sooner you start, the quicker you can amend any errors. Secondly, keep your plans realistic and avoid daydreaming about your project and how exciting it will turn out be. By raising your expectations you are also pressuring yourself more.

Finally, remember that beating procrastination, especially in its most full-blown form, can take a long time. It's important to at least identify the problem early on, as most supervisors (and even friends) can have a very low level of tolerance towards procrastinating behaviour when it comes to the Extended Essay. Most schools will not accept an unfinished product or will not allow you to edit anything after the deadline. Thus, make sure to talk to *someone knowledgeable* (e.g. a school counsellor) if your problems are getting out of hand.

Steps towards self-help (summary):

- Defining the *reasons* for the problem.
- Noticing that you have certain thought patterns that aggravate the problem.
- Actively notice and go against these patterns every time you encounter them again.



# Finishing

*If you've made it to this point: congratulations! The Extended Essay is a lot of work and all those who have produced a final draft should feel proud of themselves. If you doubt the quality of what you've written, do not worry. Usually you are simply too caught up in your essay to be able to have any real perspective on the matter. There are, however, a couple of steps that you could use to perfect your finished text.*

## Proof-read

You will inevitably make errors - the author's blindness towards his own text is a curious yet common phenomenon. It is also important not to rely too heavily on spell checks and word processors, as they can lull you into a false sense of security (one student ended up writing 'fro' instead of 'for' throughout his essay!).

## Allow others to proof-read

This deserves its own point. Family members, friends, teachers, and employers - you can choose different people for different reasons: their language style, their knowledge, their brutal honesty or their willingness to help. Make sure not to overly debate any point with someone who has offered to help: this might discourage them from trying again. Instead, listen carefully, even if some advice is threatening your most beloved paragraphs.

## File it away

It is advisable to leave your finished essay be for a while, even if

it's only overnight. Any subsequent re-reading allows you to take a more objective view of the strengths and weaknesses of your text. Imagine that you are looking at someone else's work.

## Keep up appearances

Make sure that your layout is neat and consistent - your text should seem inviting to read. Add a decorative frame to the title page if you want to, make sure that your images are placed exactly right and that you are using the right form of spacing throughout. Do not add too much at this stage - you should rather aim to streamline the whole essay and not turn it into the Extended Essay version of an arts and crafts project.

## Double-check

Again, go through each of the formal criteria, carefully checking that you have included everything. Don't expect to know the criteria by heart. Look at general advice as well as checklists and try and place yourself in the situation of the examiner. How would you mark your own script?

## Plagiarism-check

Your examiner will be able to tell whether or not you have taken ideas from somewhere else or if you've bought a whole essay. Remember: mistake like these can result in the loss of your diploma.

## Handing it in

This speaks for itself. Just do it (on time)!

## Preparing for the viva voce

Unfortunately, the previous point is not the end of it all. Your supervisor can arrange to have a concluding oral interview with you – usually it's short and should not take longer than 20 minutes. Do not worry excessively about this: it is mostly to catch plagiarizers and to help students who have a bad time explaining themselves in writing. If you have written your own text this shouldn't be too difficult - just make sure that you have reread it again before the *viva*. Most students actually find this a welcome opportunity to be able to talk about their scripts.

## Final words

After handing in your final draft give yourself some time to think about what you have learnt from the process. Even you've only taught yourself how to read larger amounts of text or how to handle a supervisor, note it and acknowledge it properly. Everyone learns something from the Extended Essay, even if it's personal and not academic.

Remember this when you get your results. Many think that their hard work was worth nothing if they get a bad mark – this is not necessarily true. This is your first attempt at this kind of work and you are not expected to get everything right. The examiner is not infallible and will inevitably have particular ideas, which you could not have prepared for. Again, what you have learnt is more important than any grade.

Thus, it's not worth your time worrying about Extended Essay marks during the second term of IB2. Make sure that you re-focus quickly and start thinking about other internals as well as the exams. But don't forget to employ any skills or new knowledge from the essay in your exam revision!

Also, when you have handed your EE in, and you are all done with it, don't forget to celebrate. Celebrating is good, celebrating is important. Until then, work hard, and the best of luck!